

Figure 1

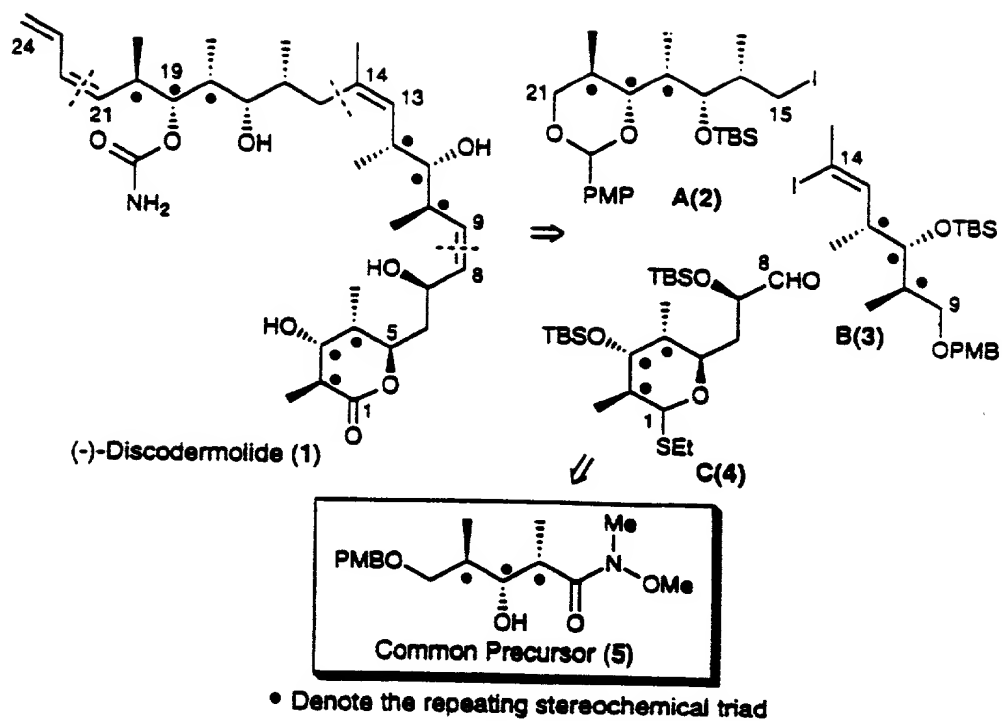


Figure 2

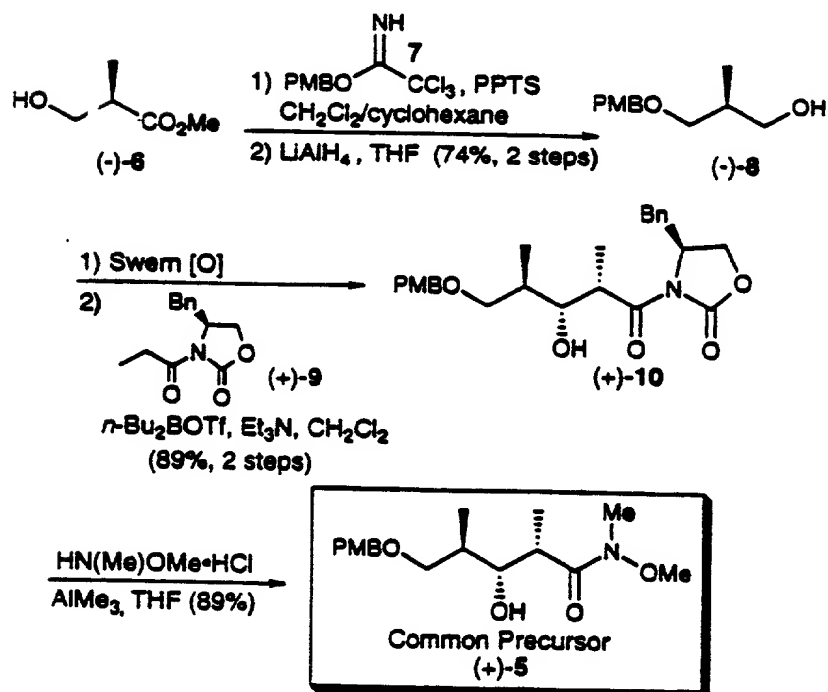


Figure 3

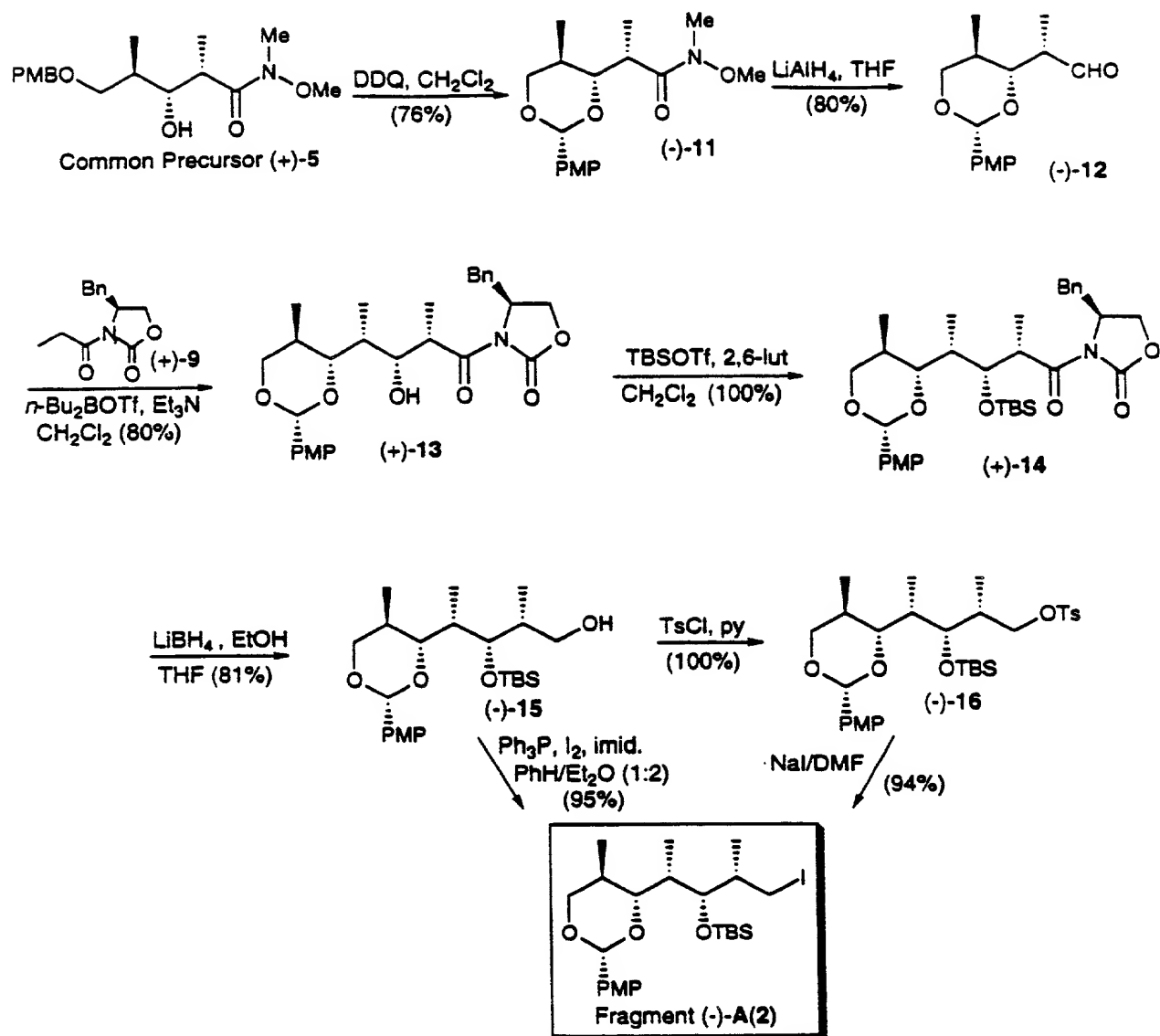


Figure 5

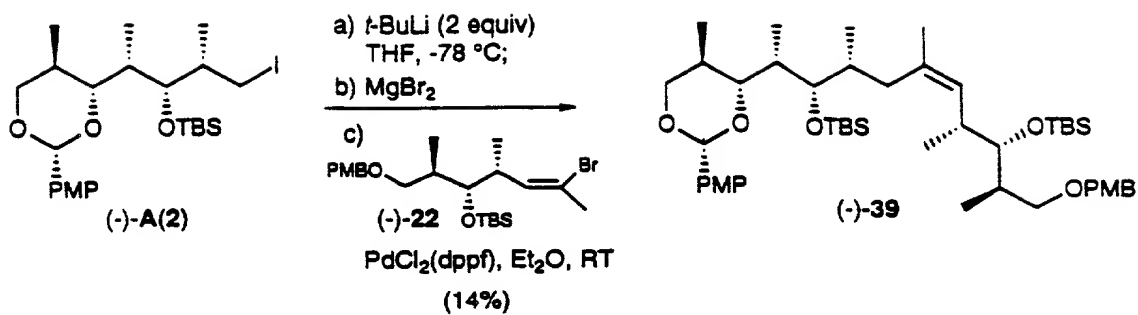


Figure 6

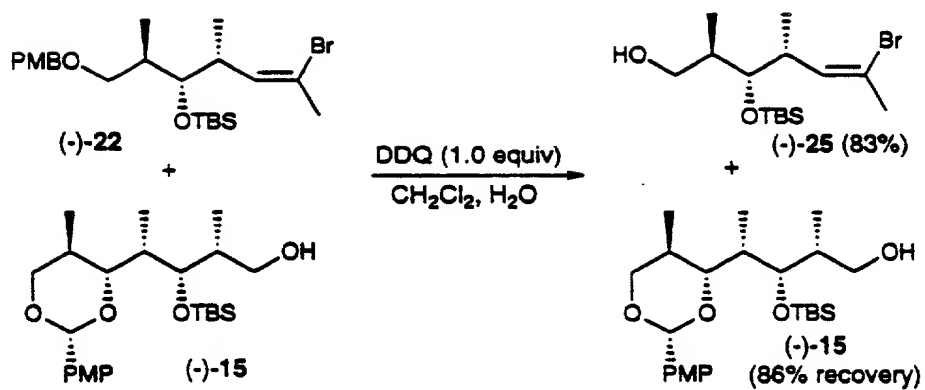


Figure 8

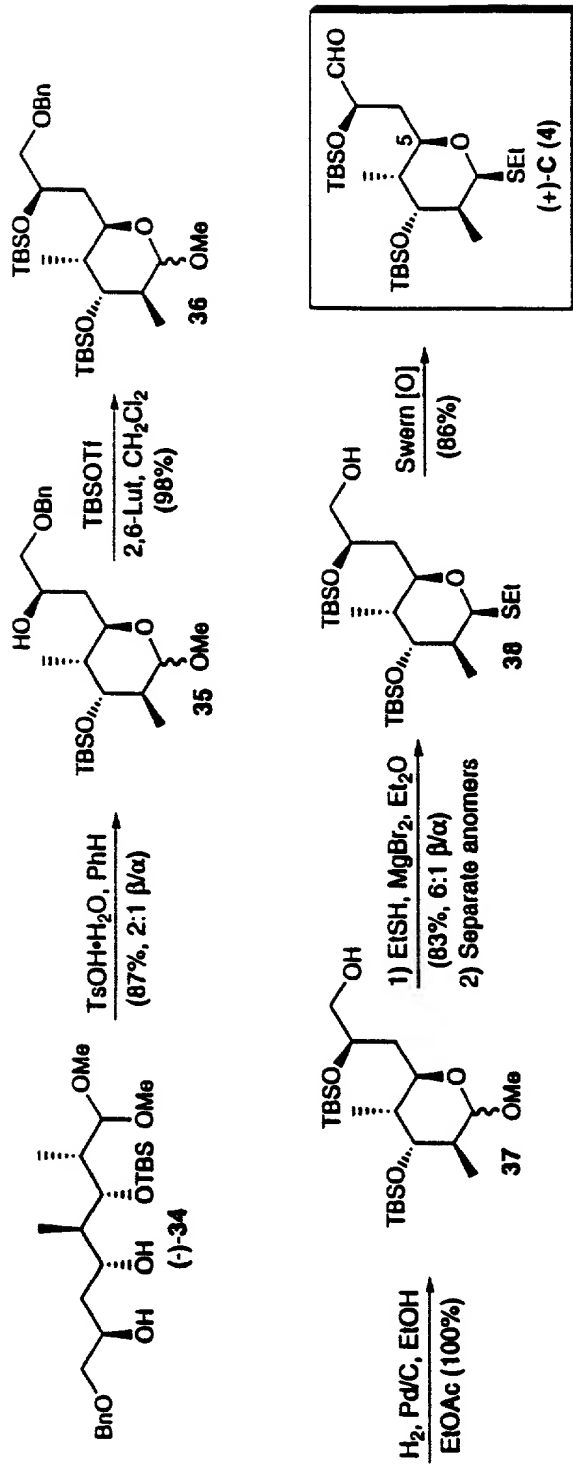


Figure 9

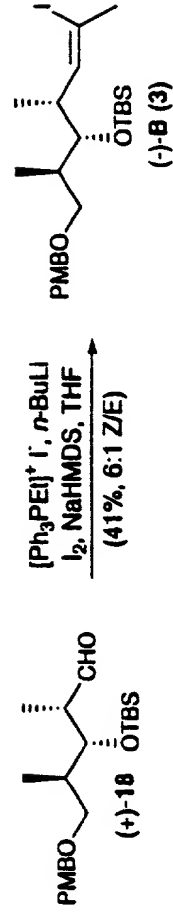
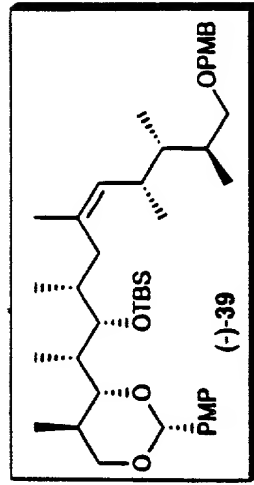


Figure 10



a) $t\text{-BuLi}$ (3 equiv)
 Et_2O
 $-78^\circ\text{C} \rightarrow \text{RT}$
b) (-)-**8**, $\text{Pd}(\text{PPh}_3)_4$
 Et_2O , RT
c) Separate **Z** and **E** isomers (66%)

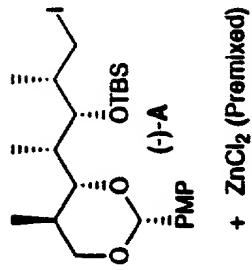


Figure 11

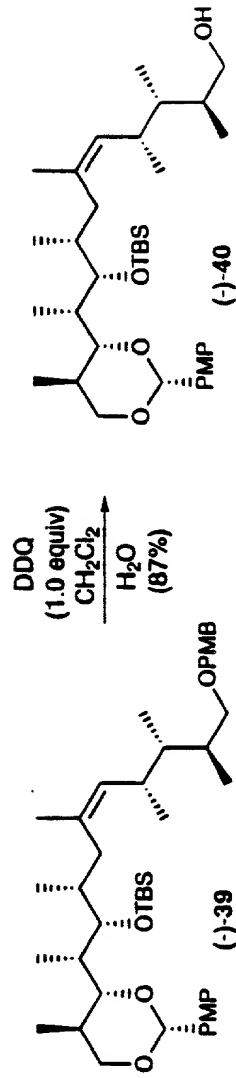


Figure 12

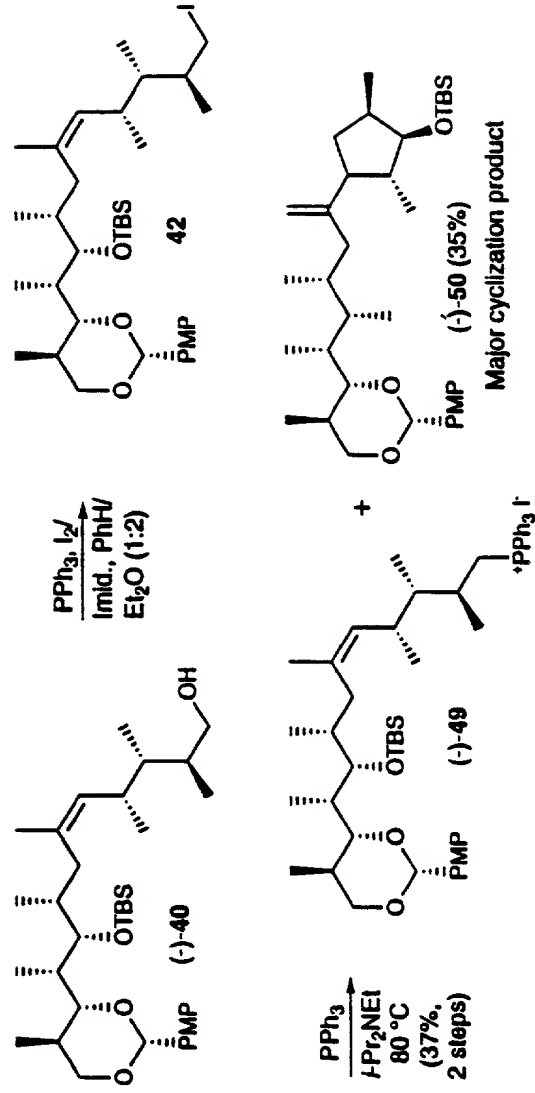


Figure 14

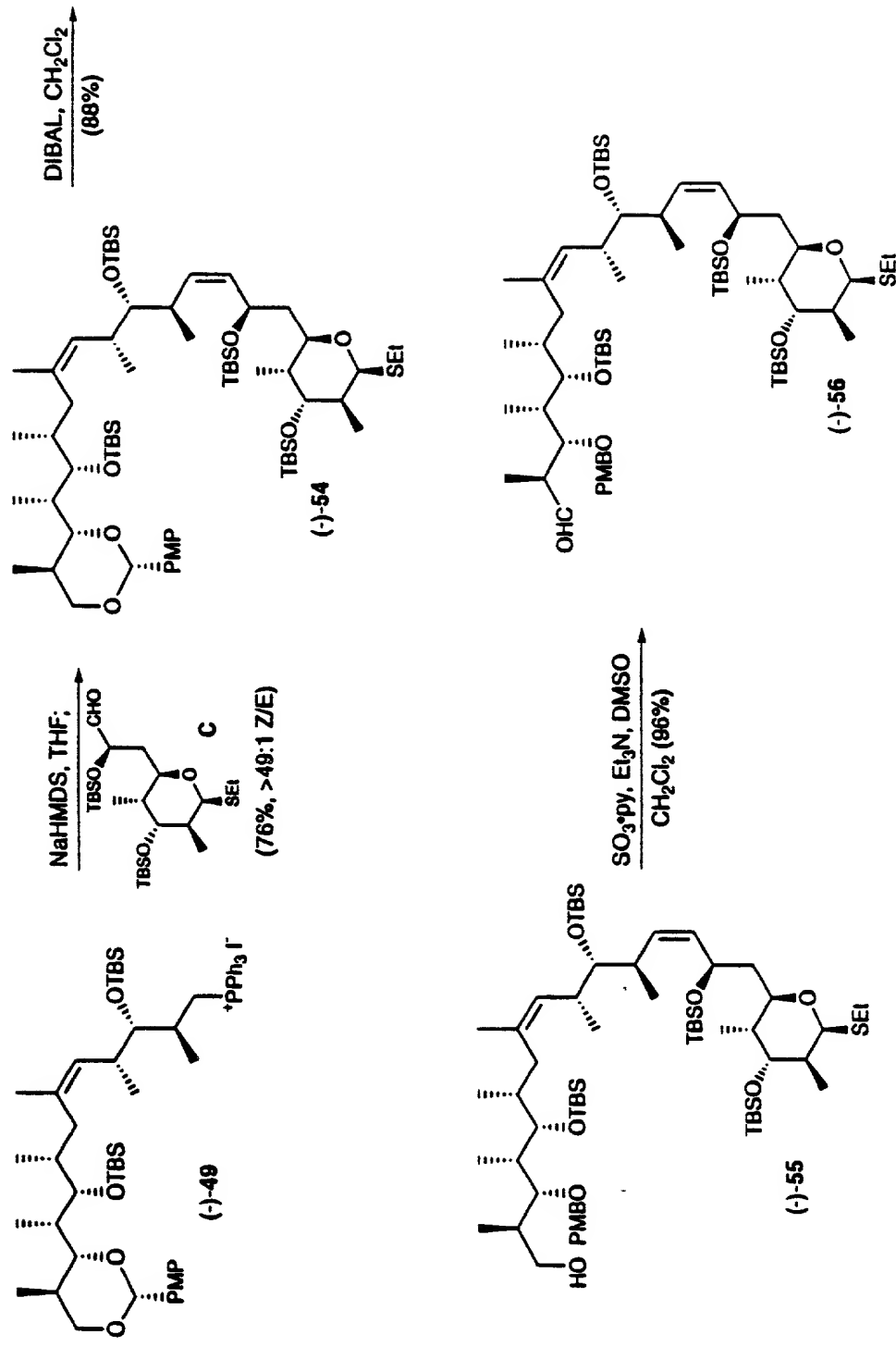


Figure 15

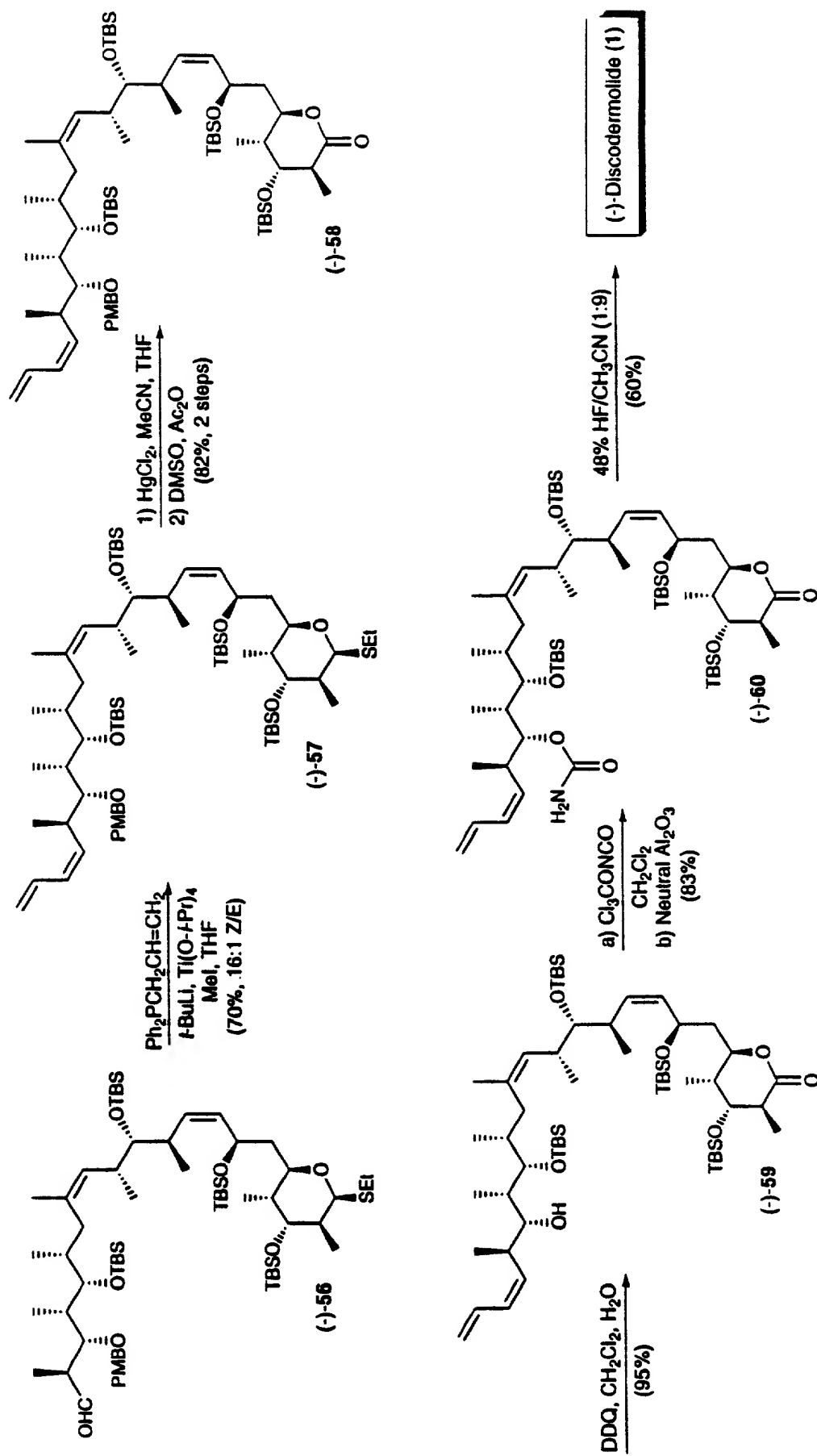


Figure 16

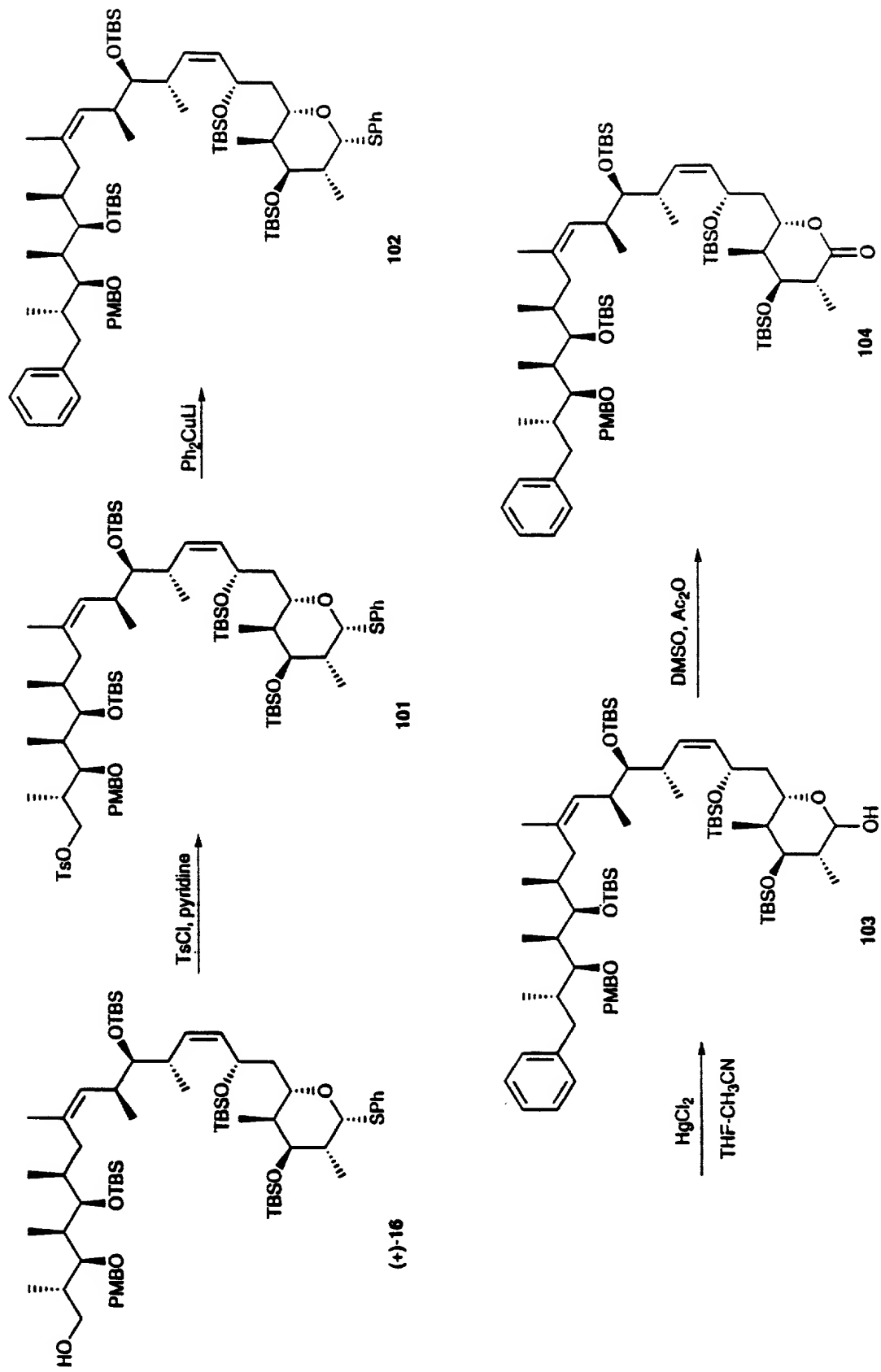


Figure 17

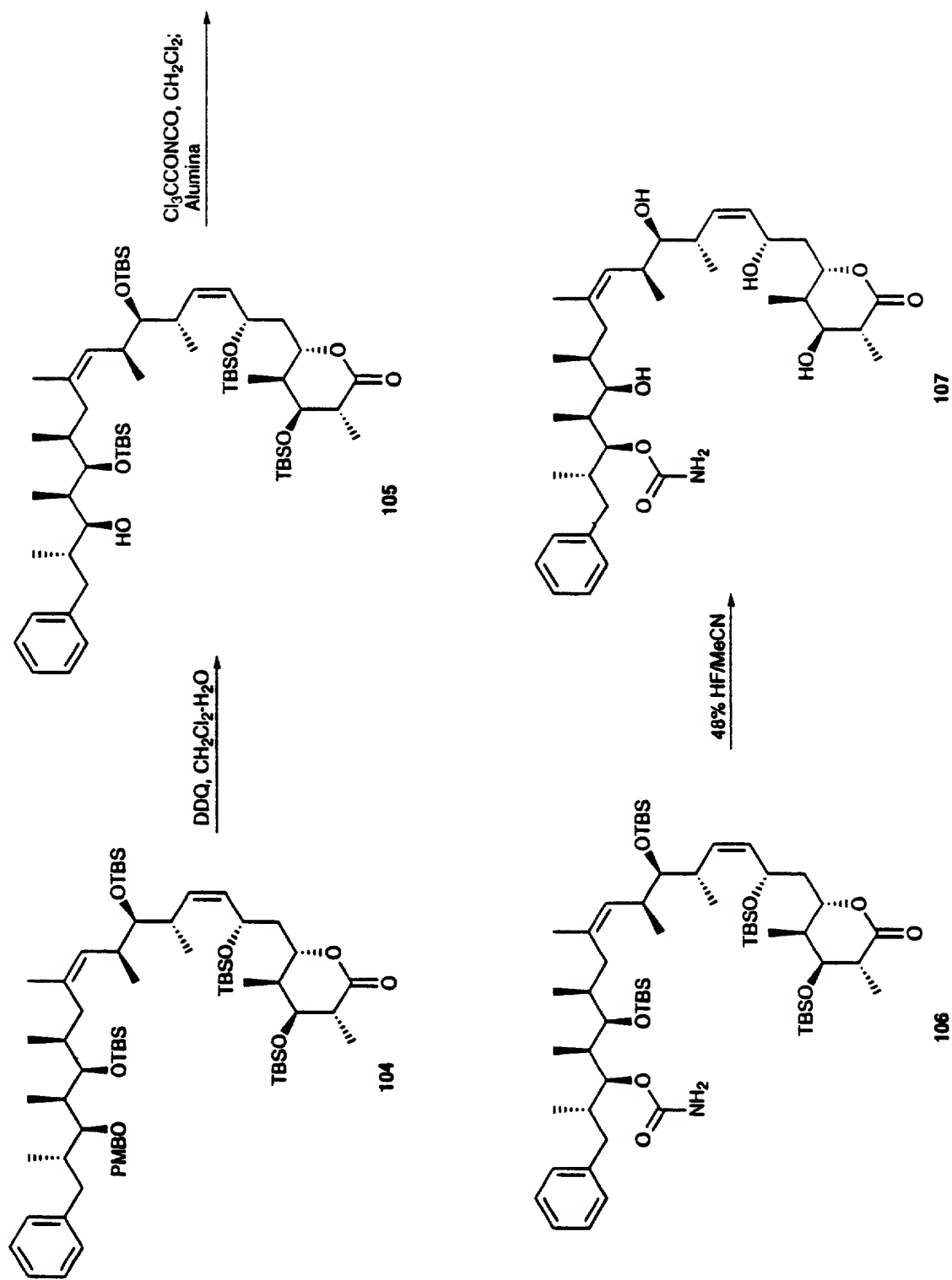


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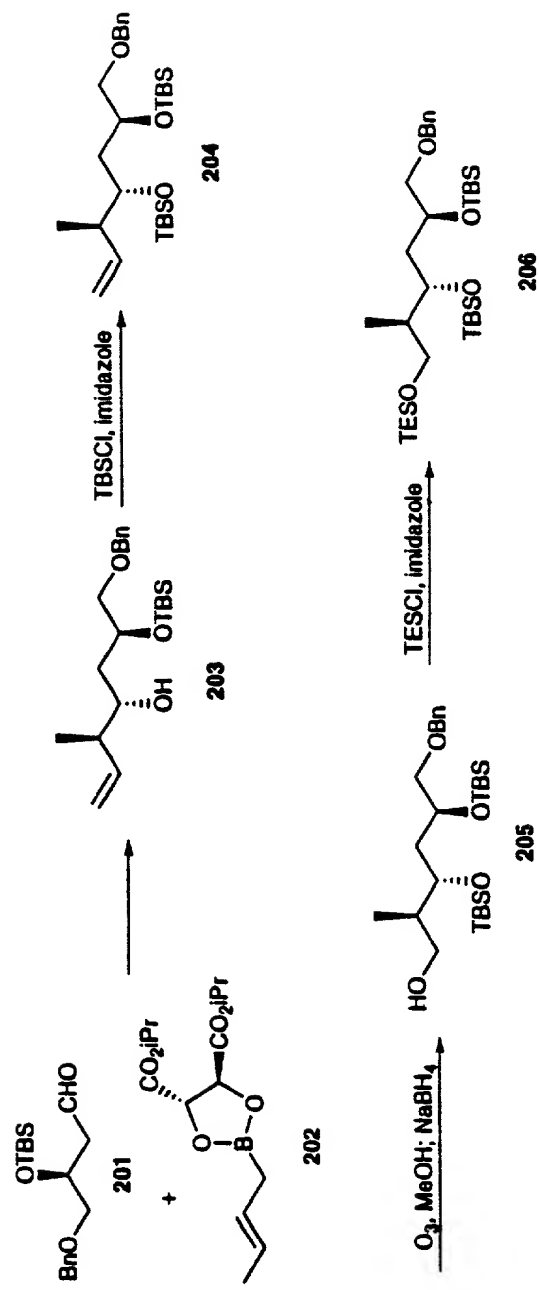


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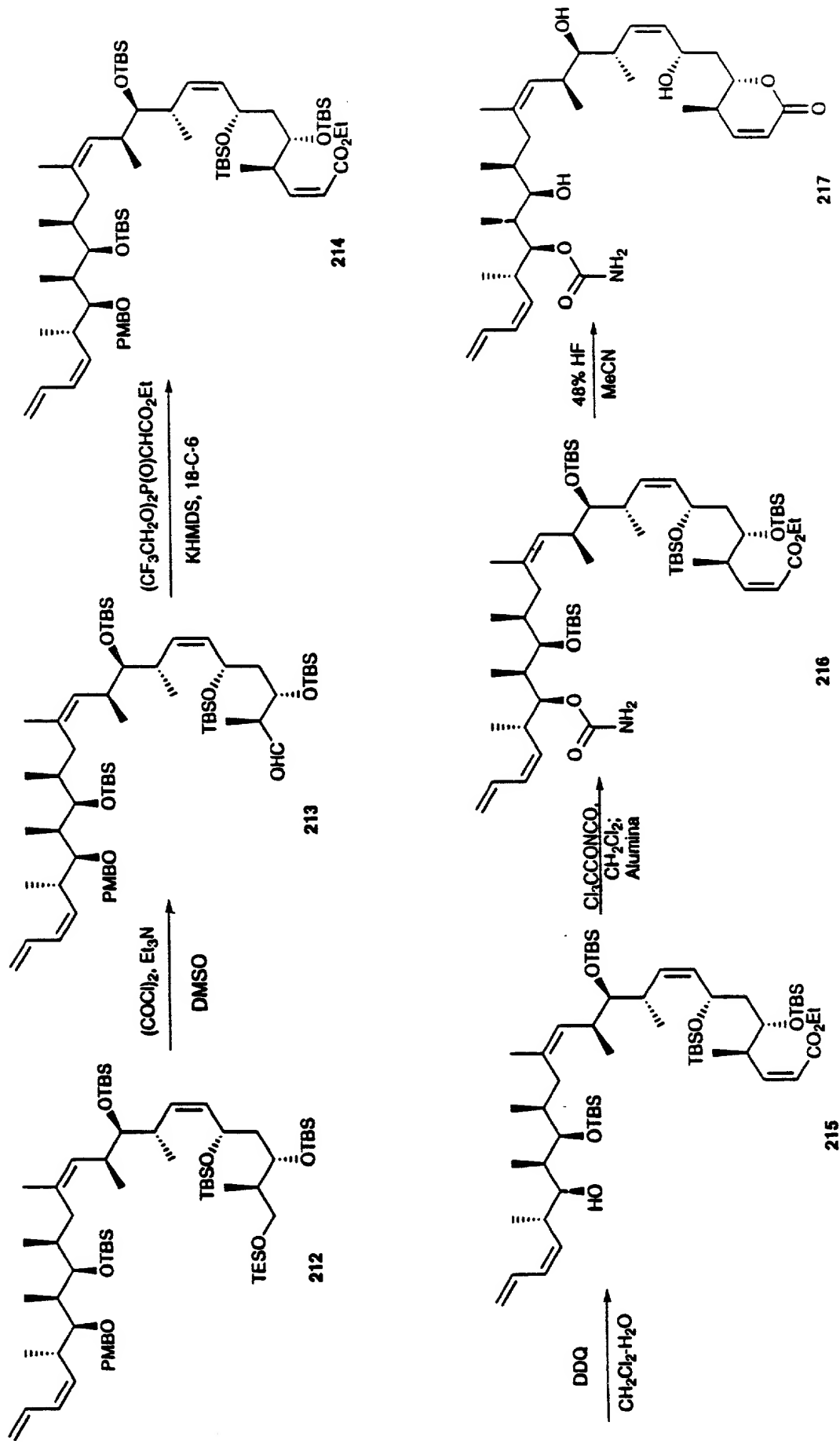


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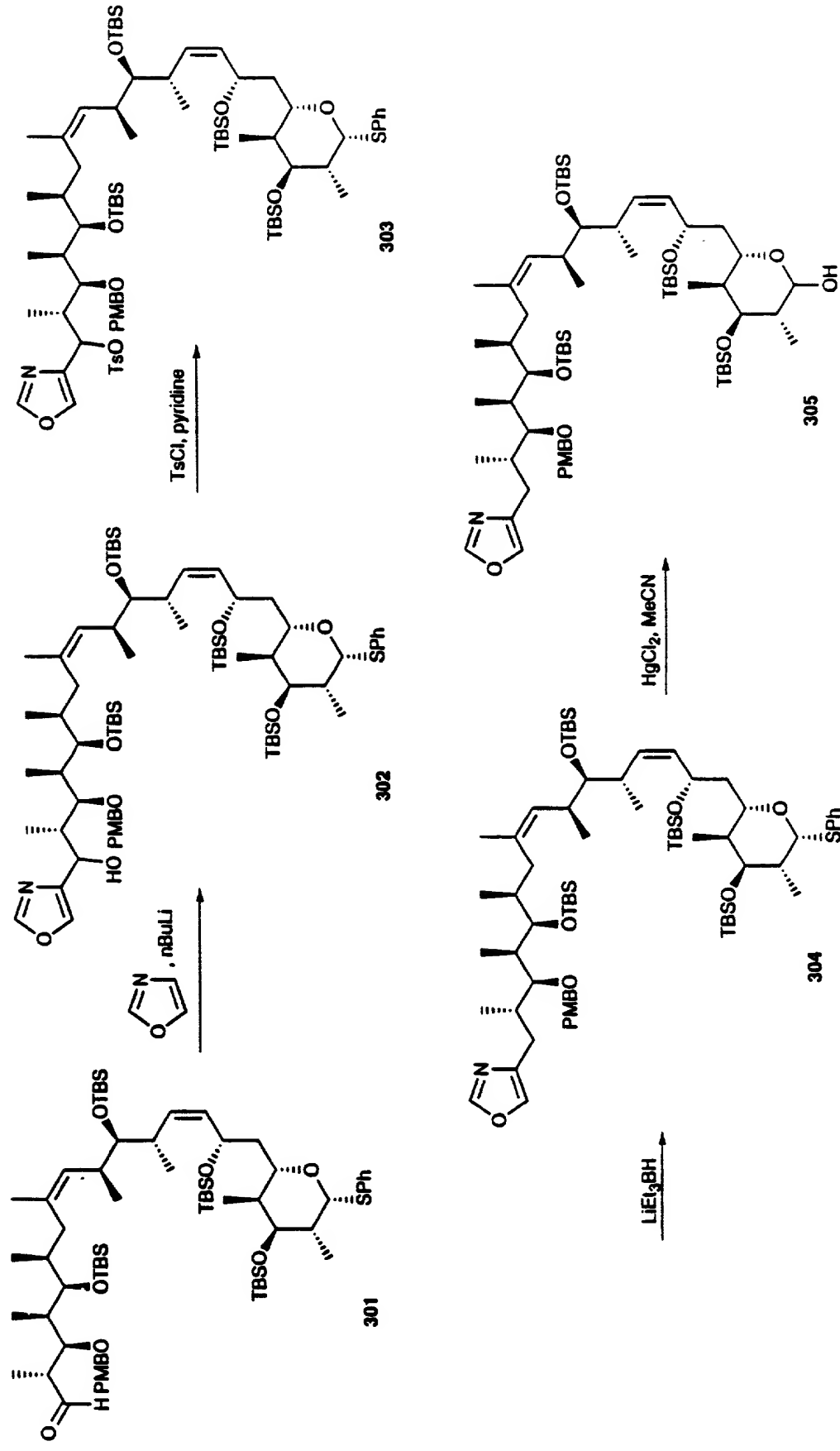


Figure 22

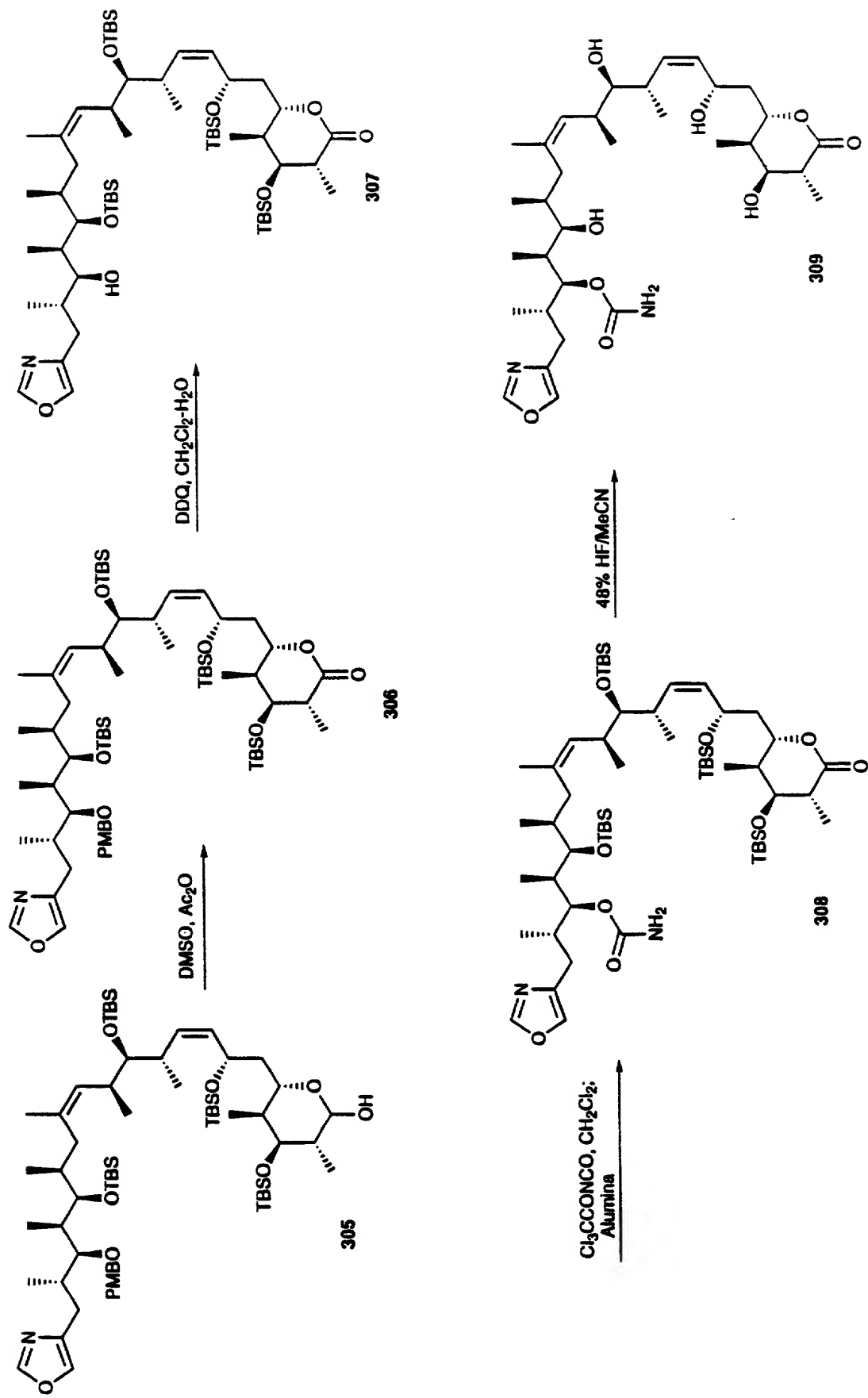


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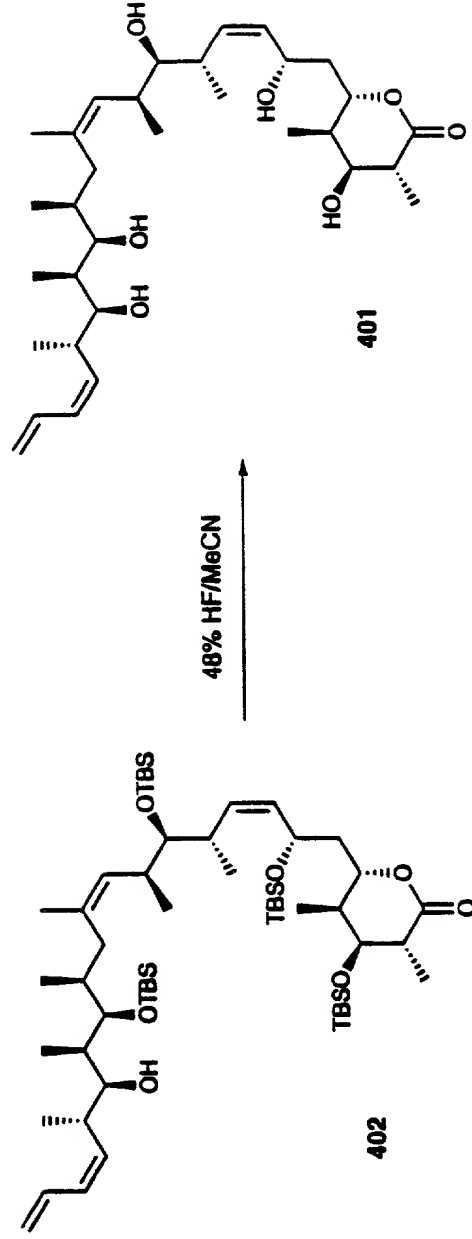


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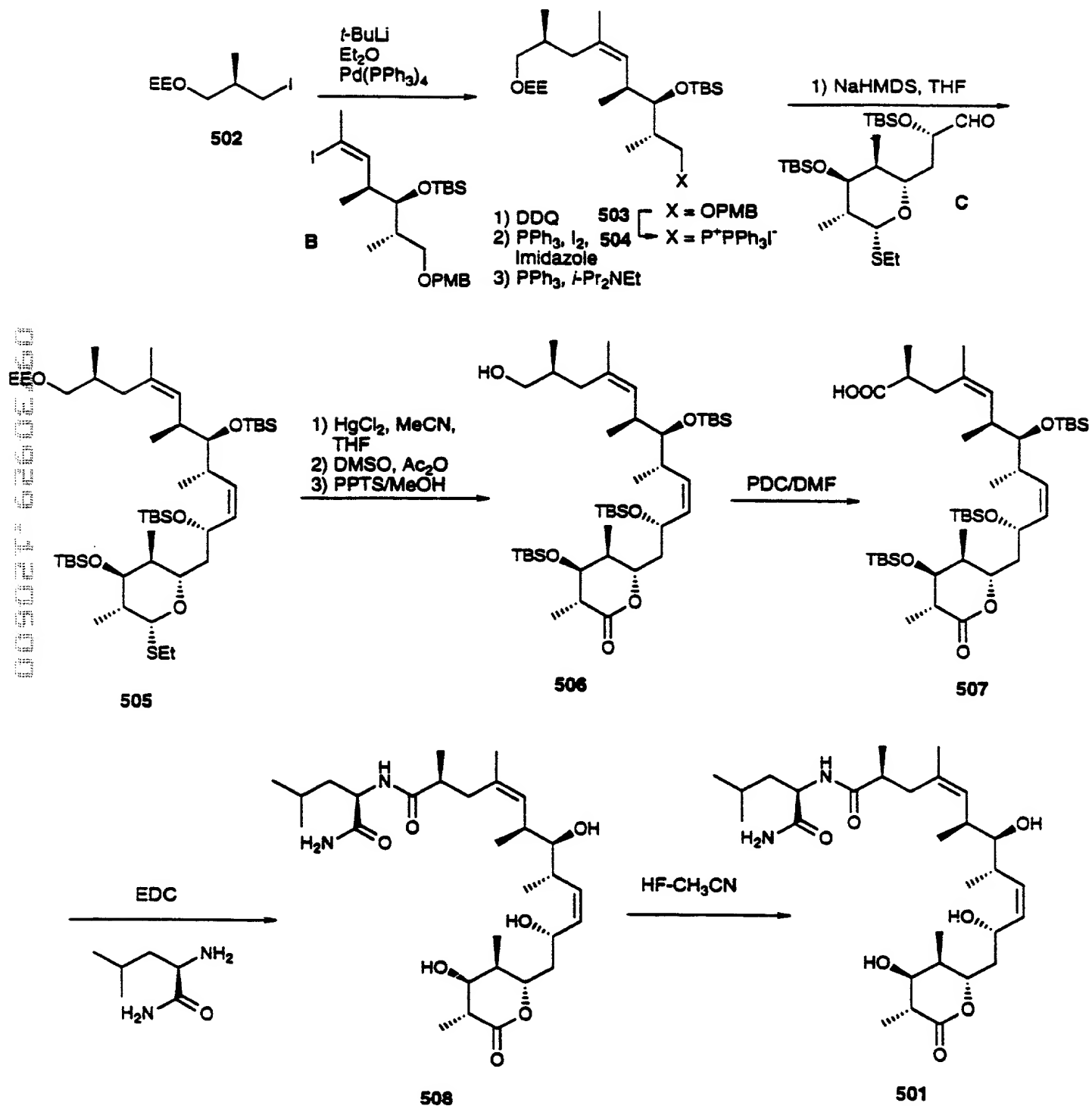


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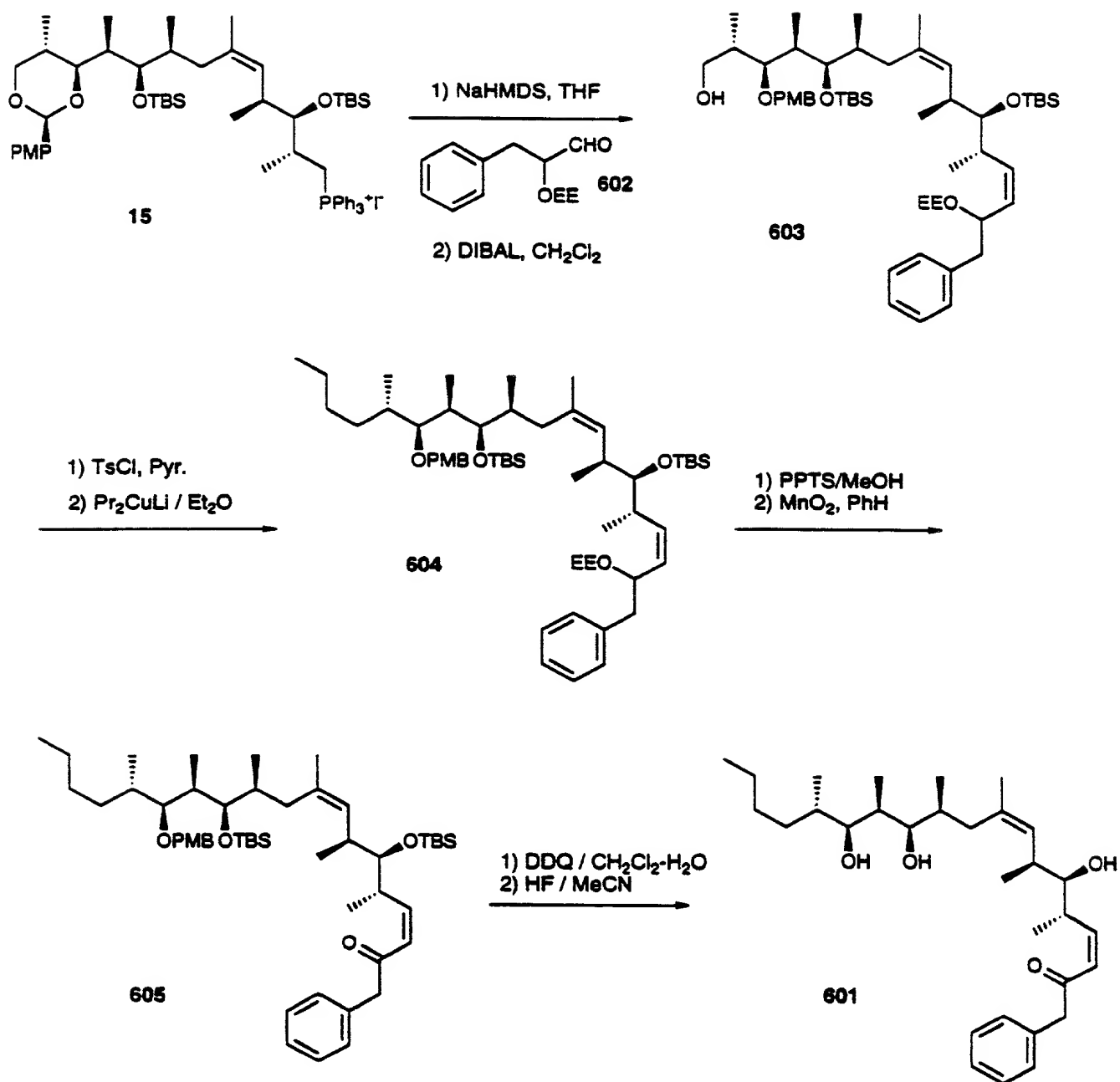
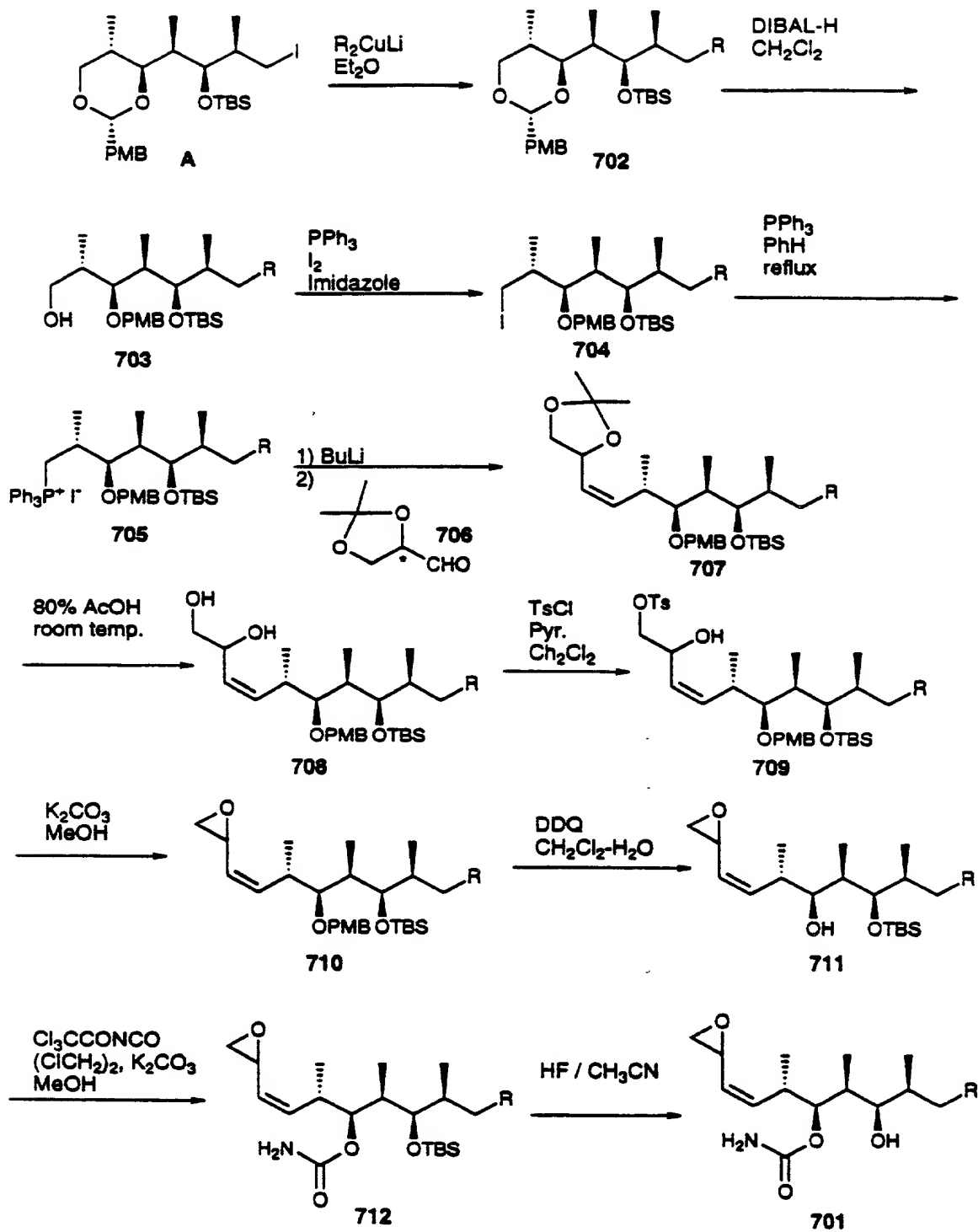


Figure 26



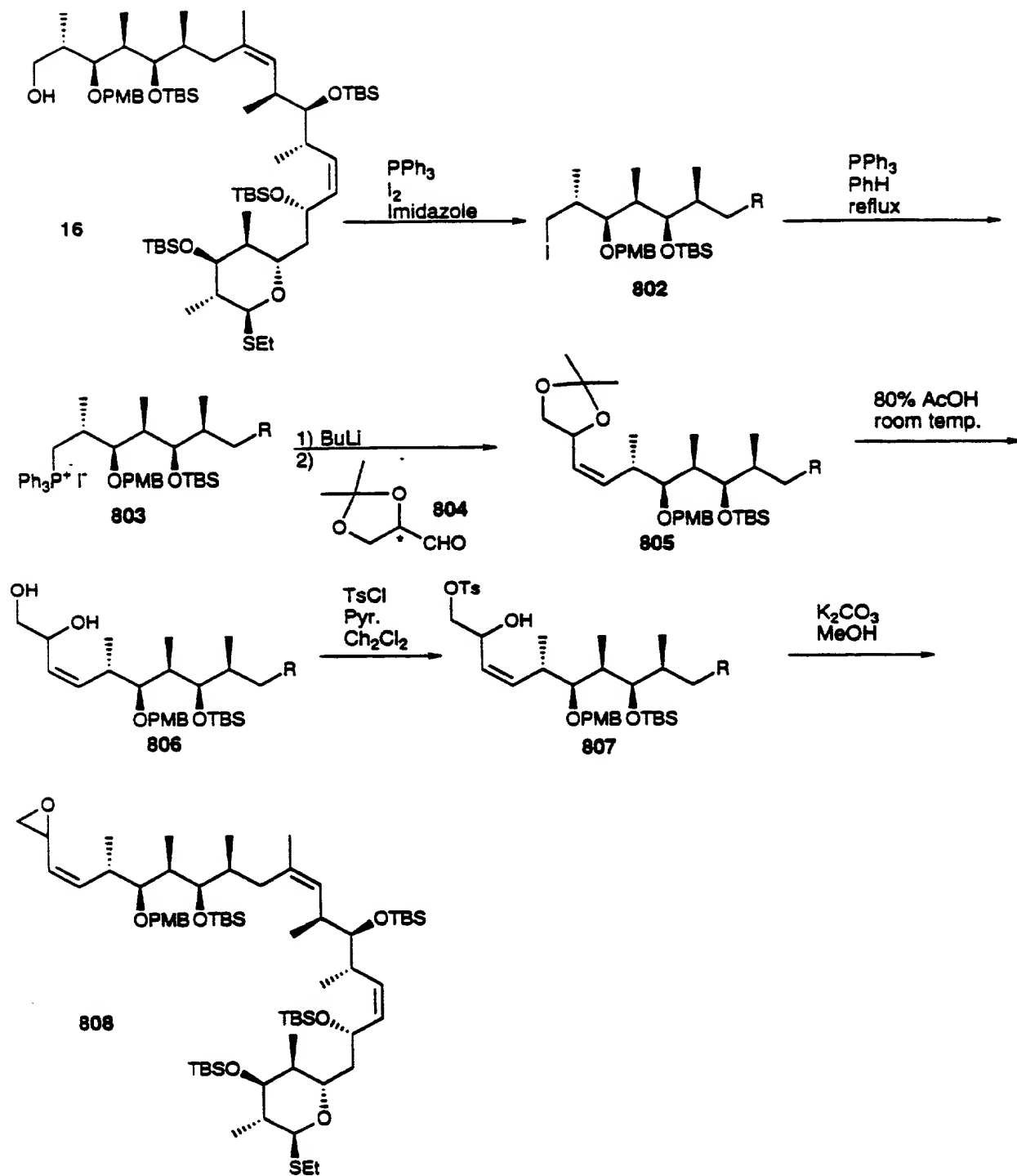
[illegible]

Figure 28

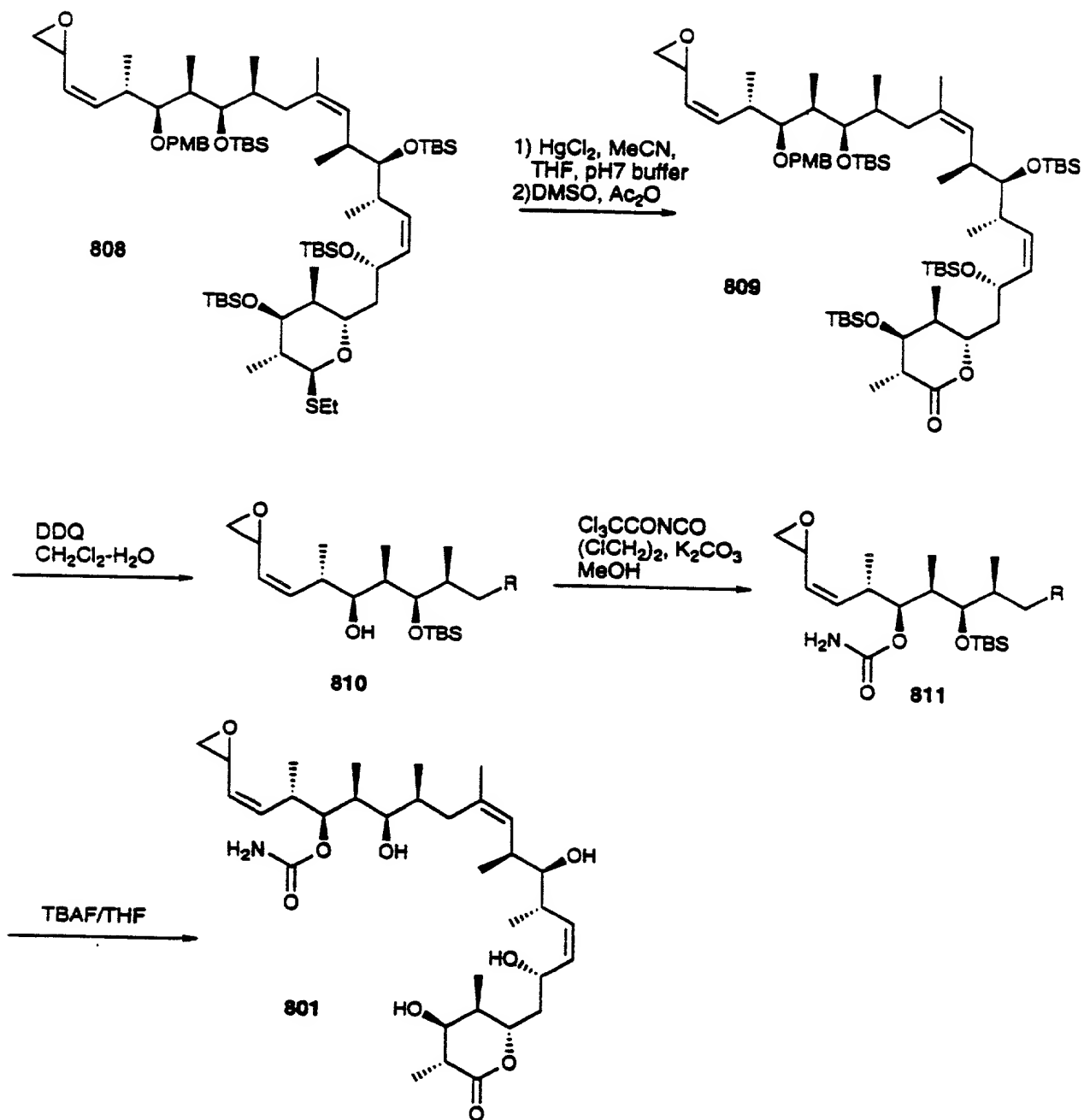


Figure 29

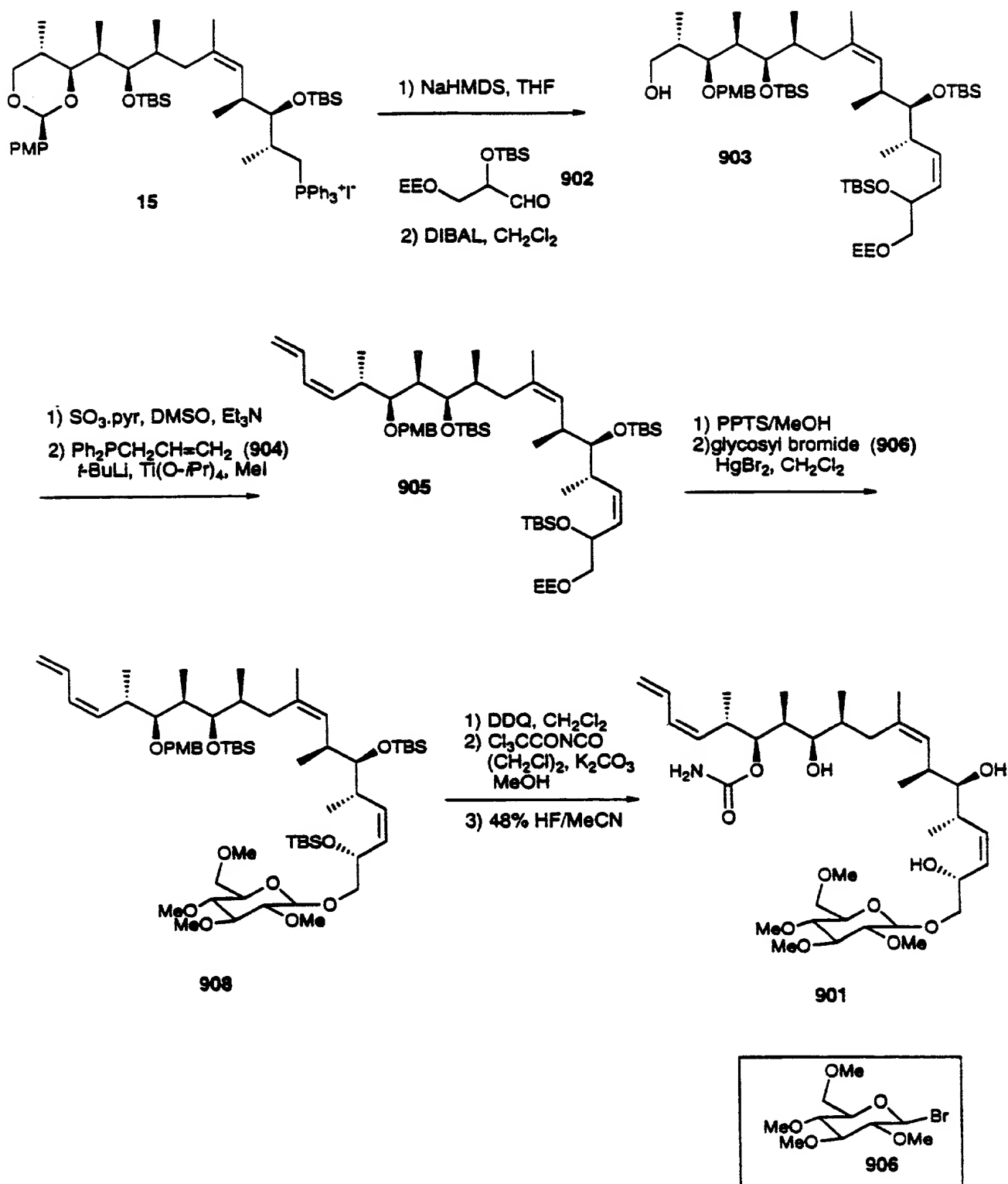


Figure 30

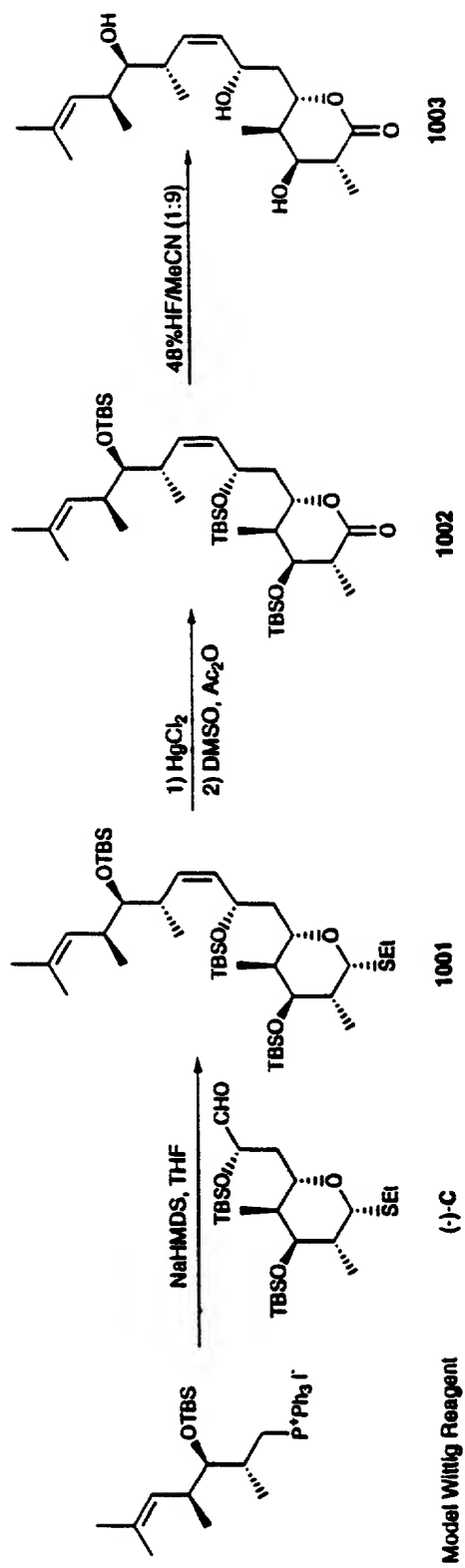
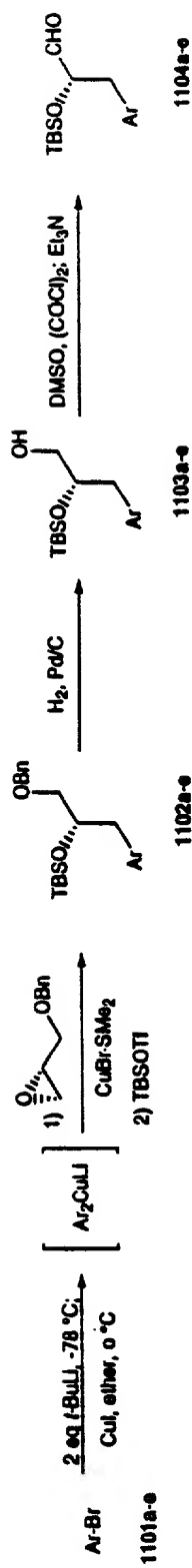
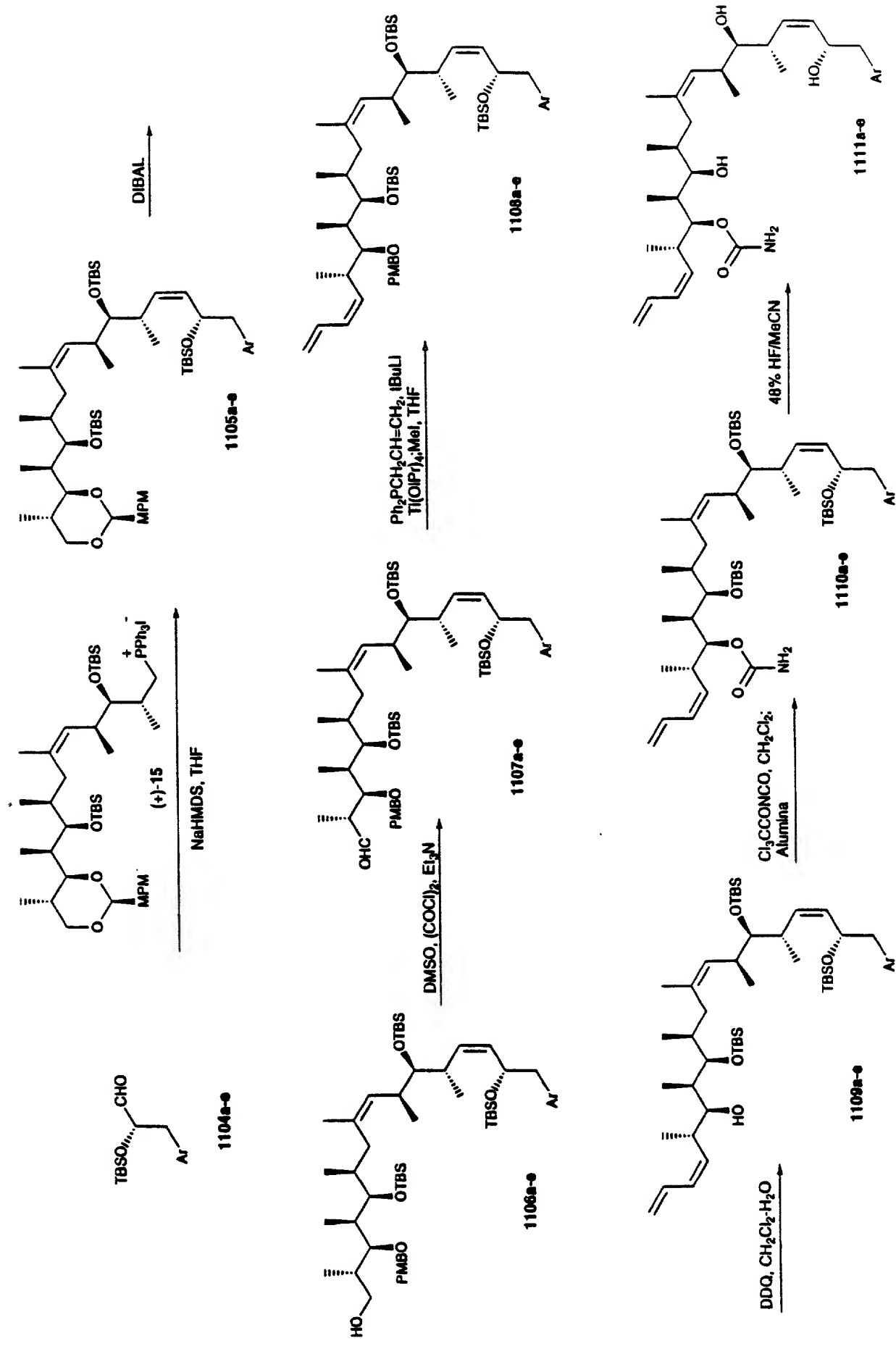
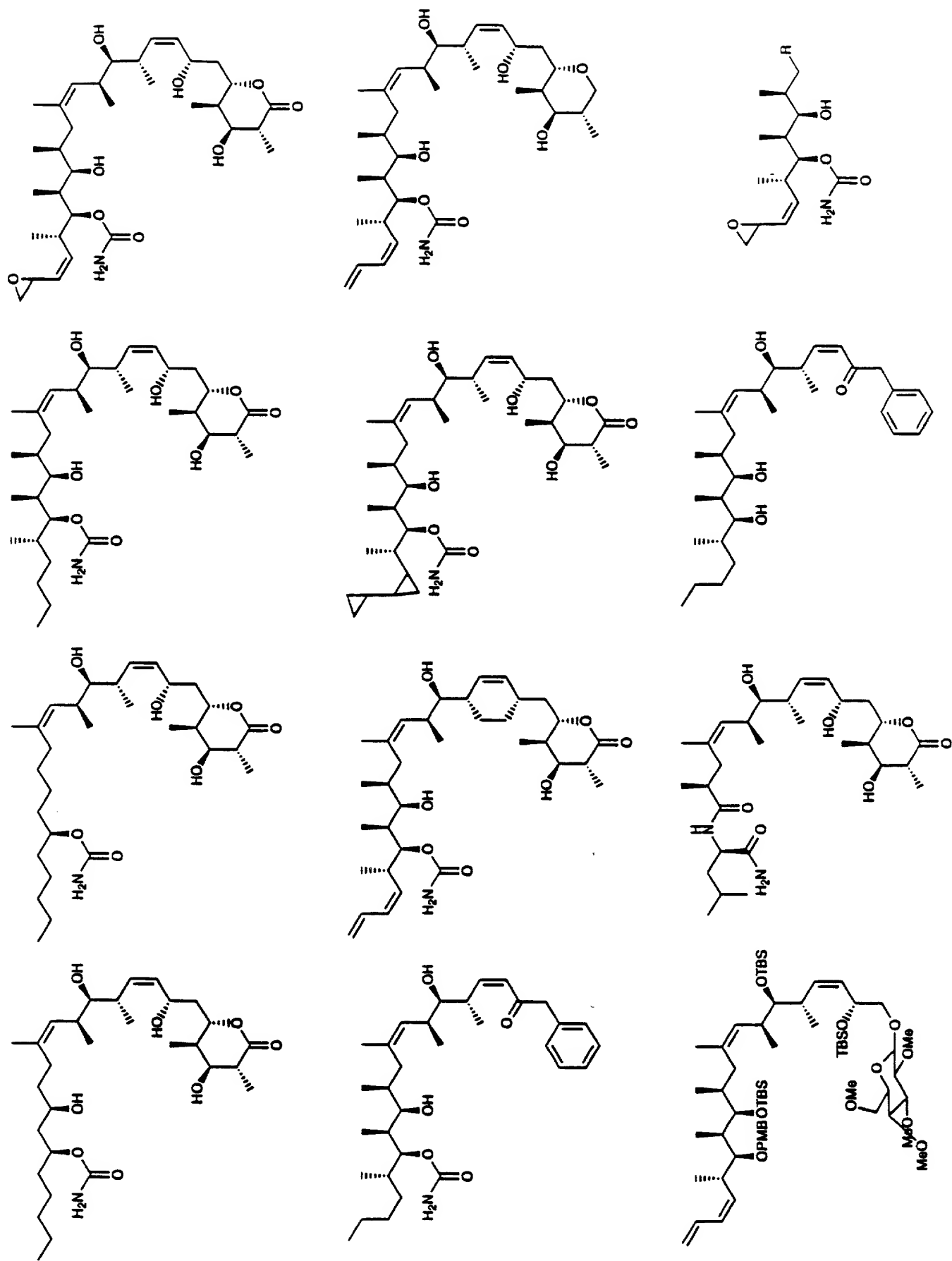
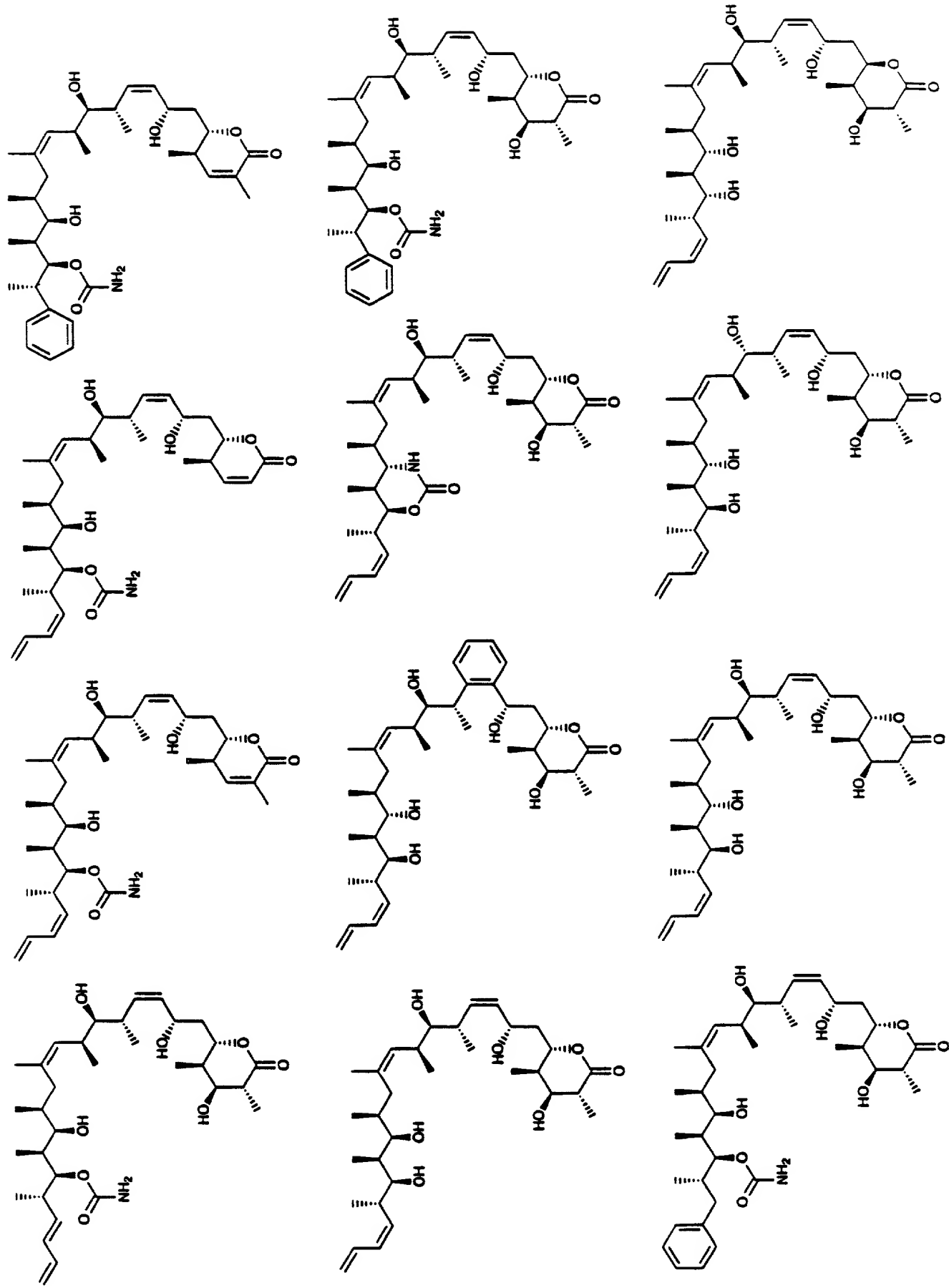


Figure 31









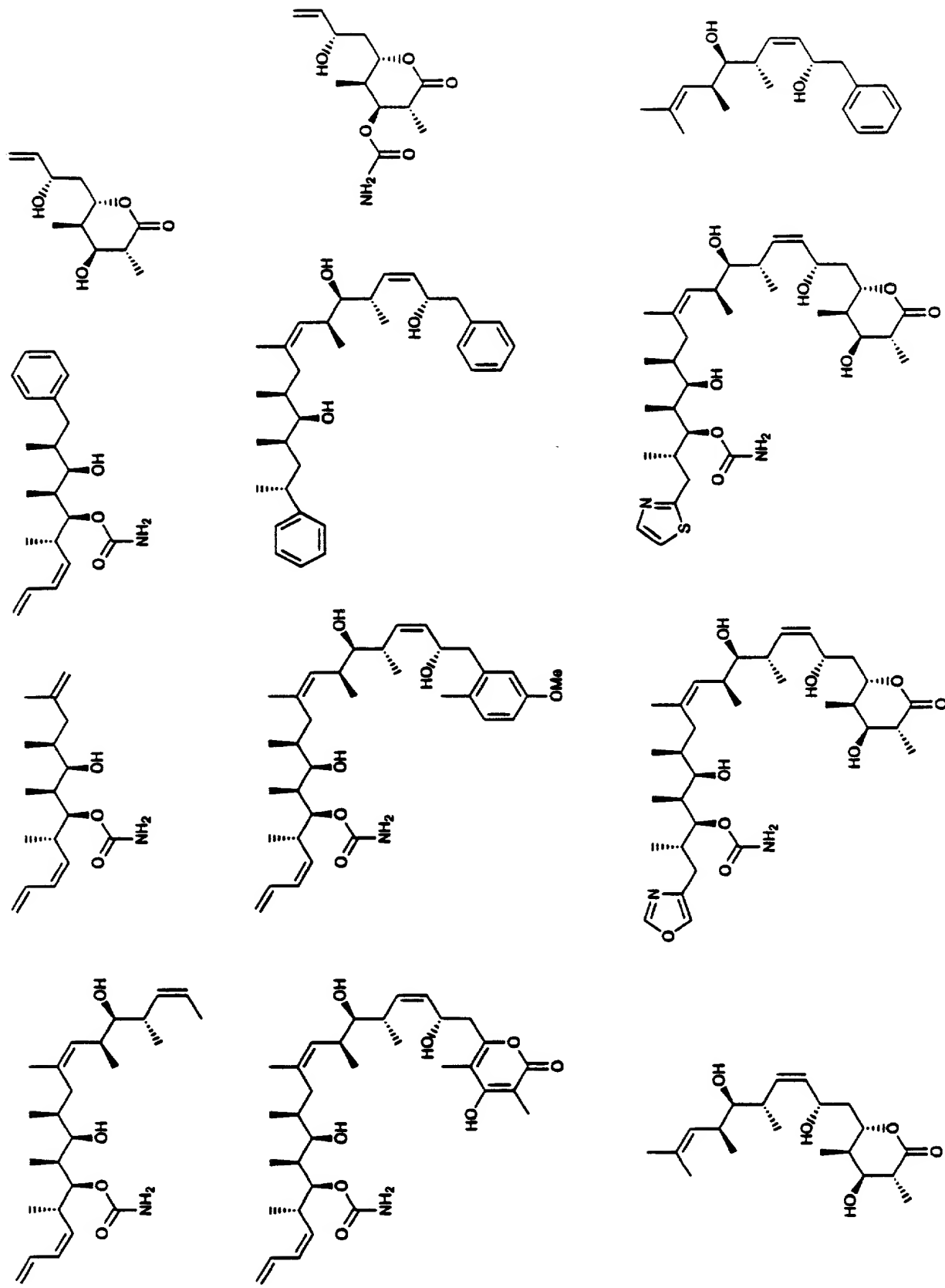


Figure 36

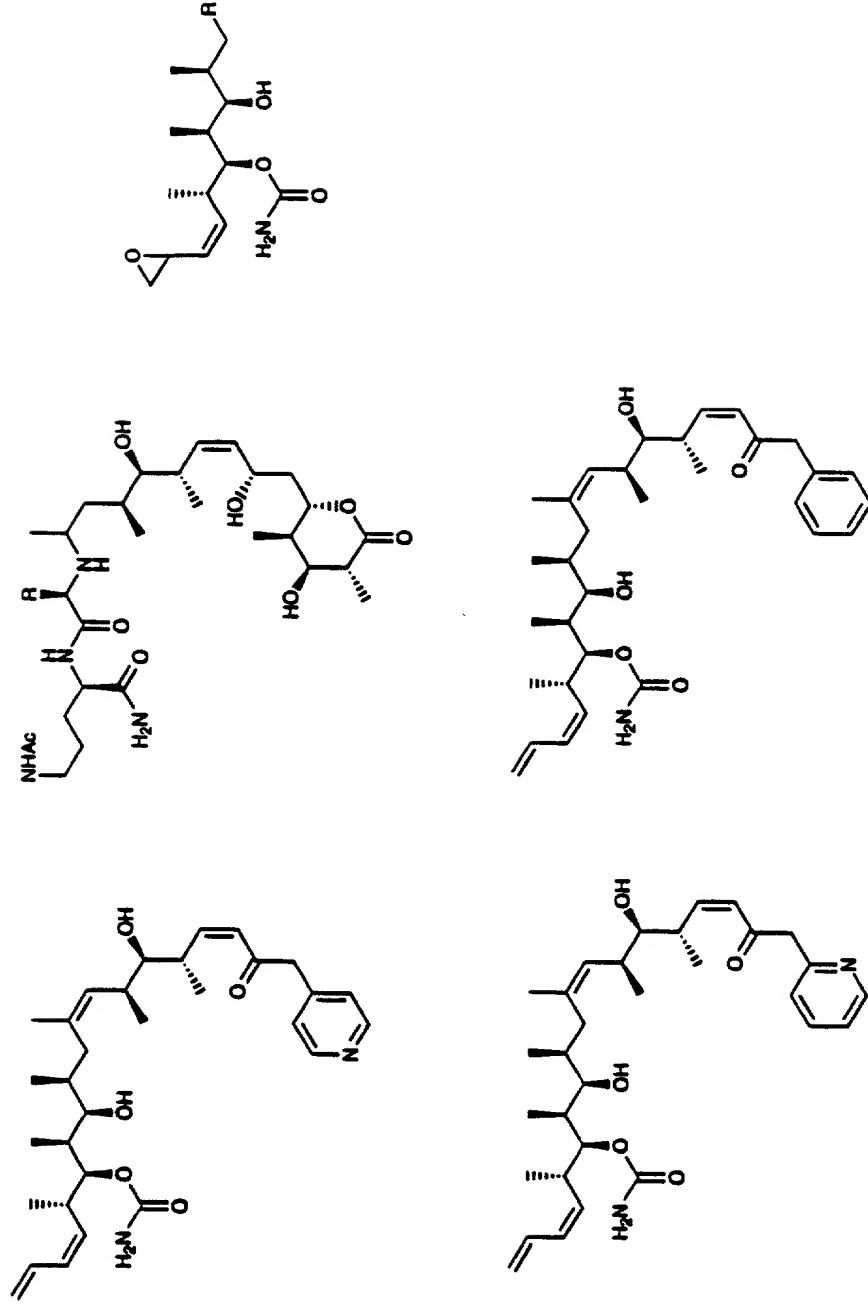


Figure 37

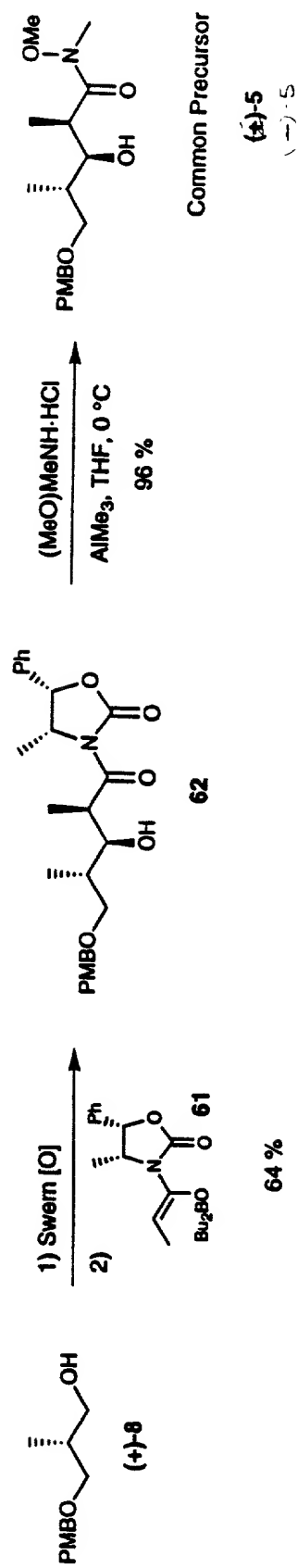


Figure 38

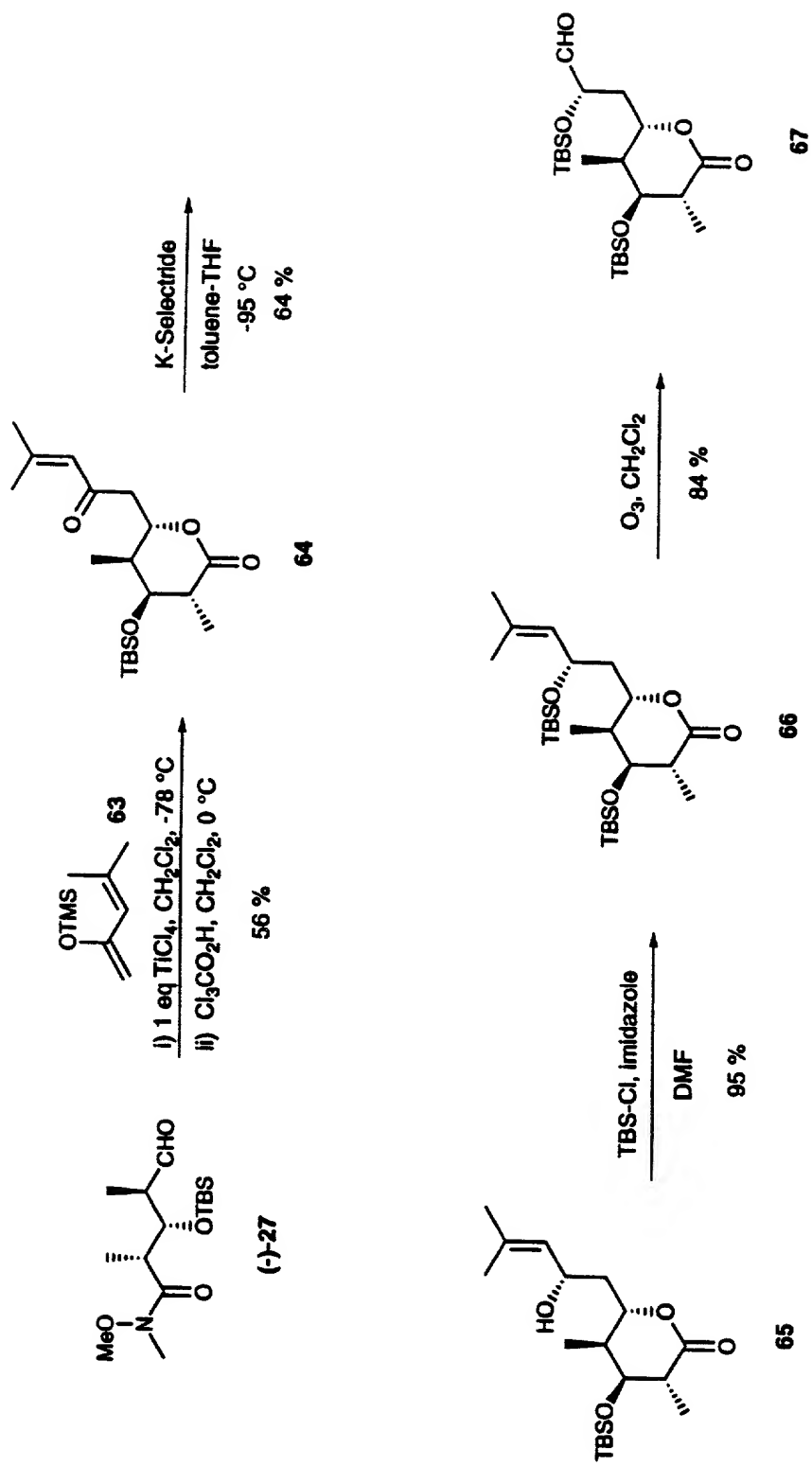


Figure 39

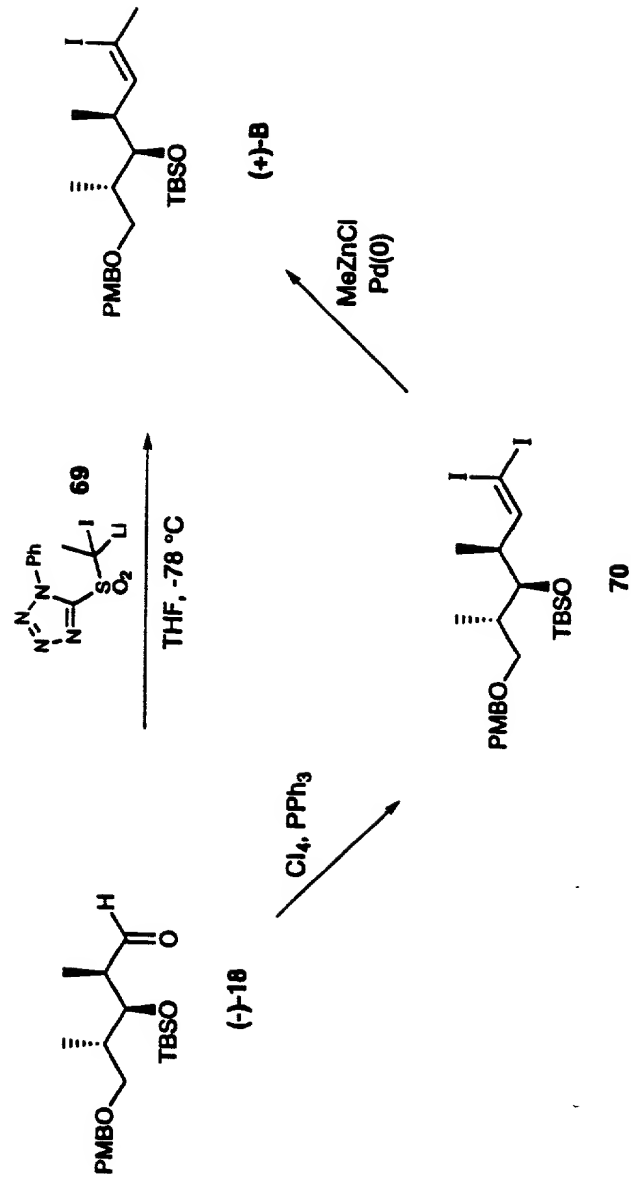


Figure 40

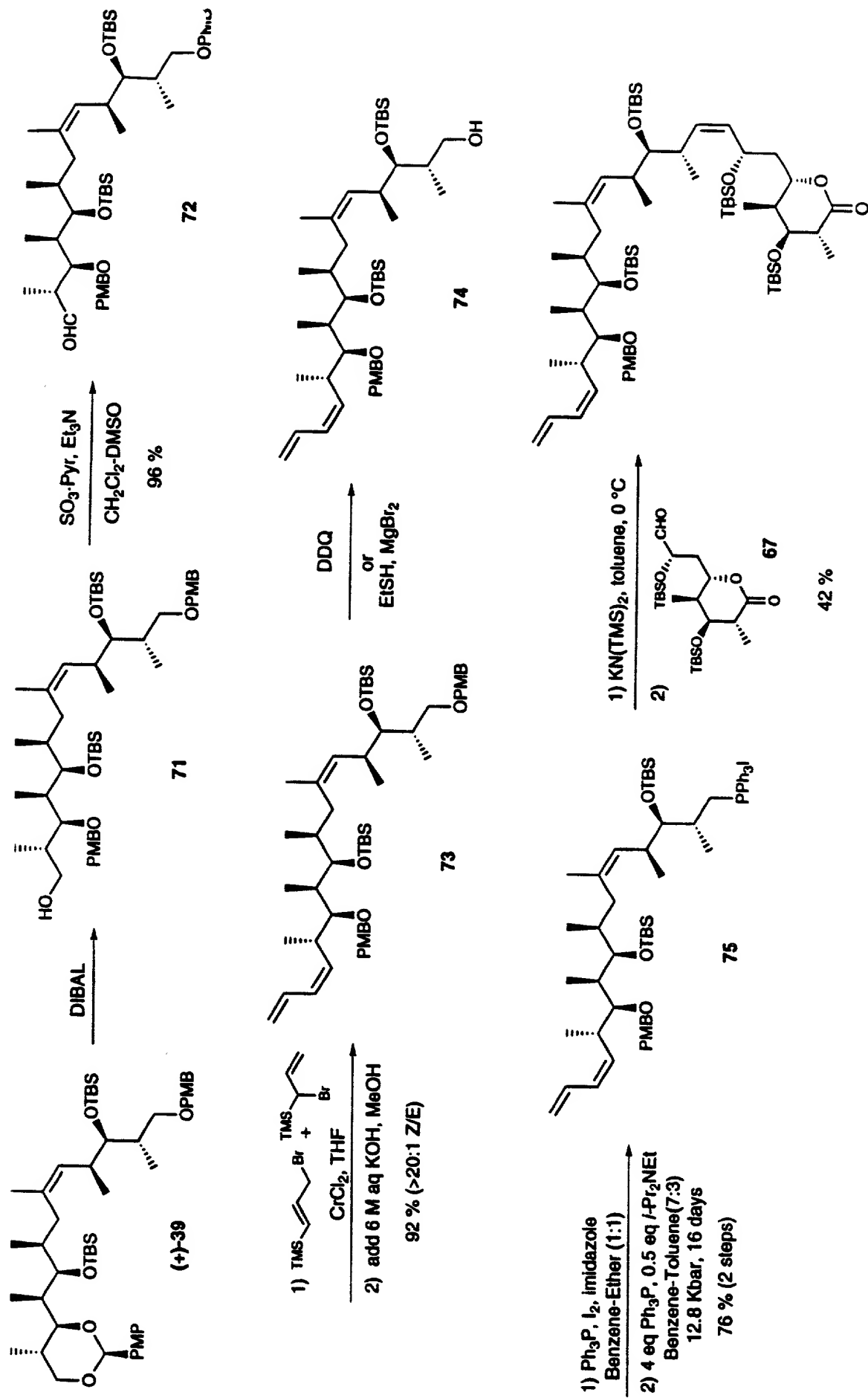


Figure 41

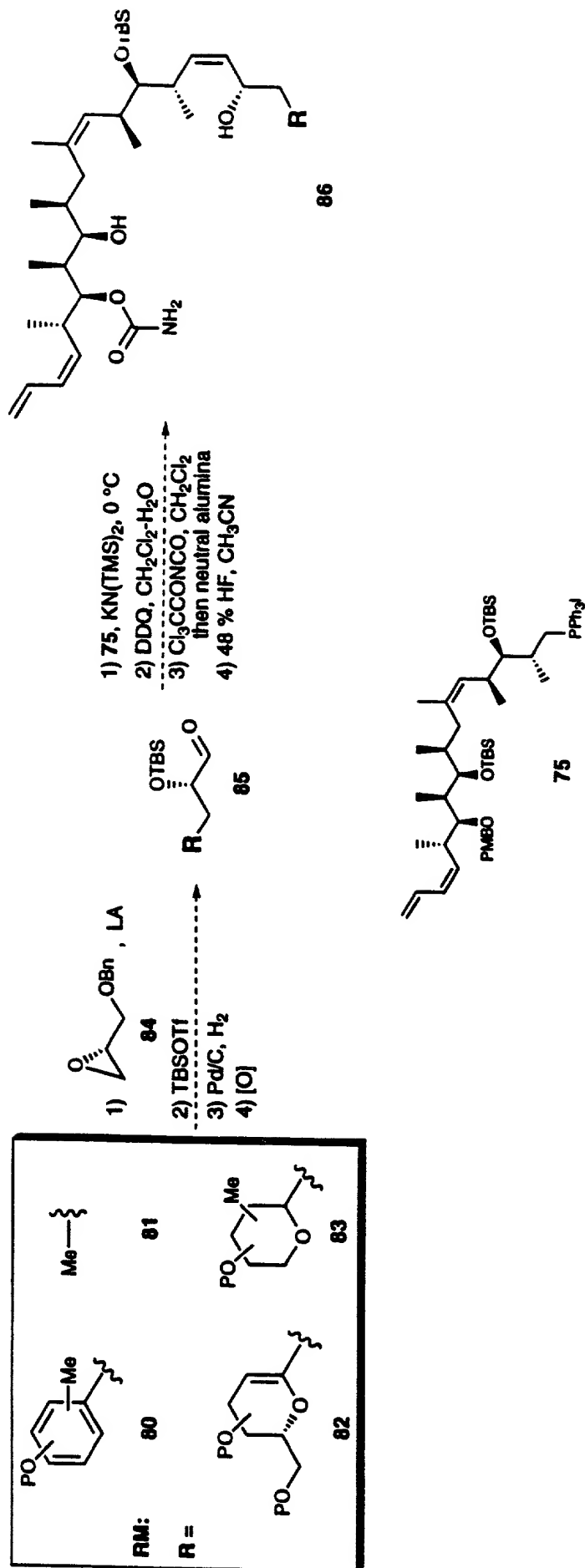


Figure 43

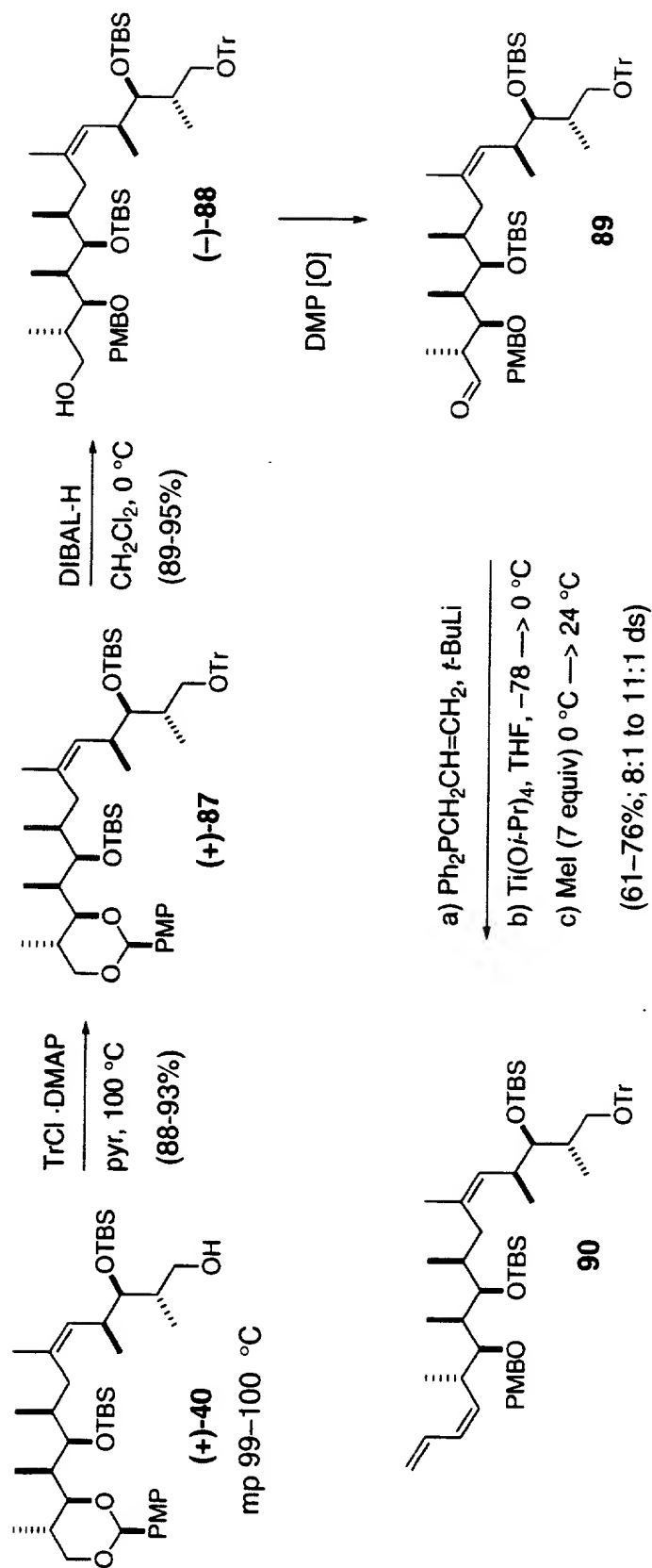


Figure 44

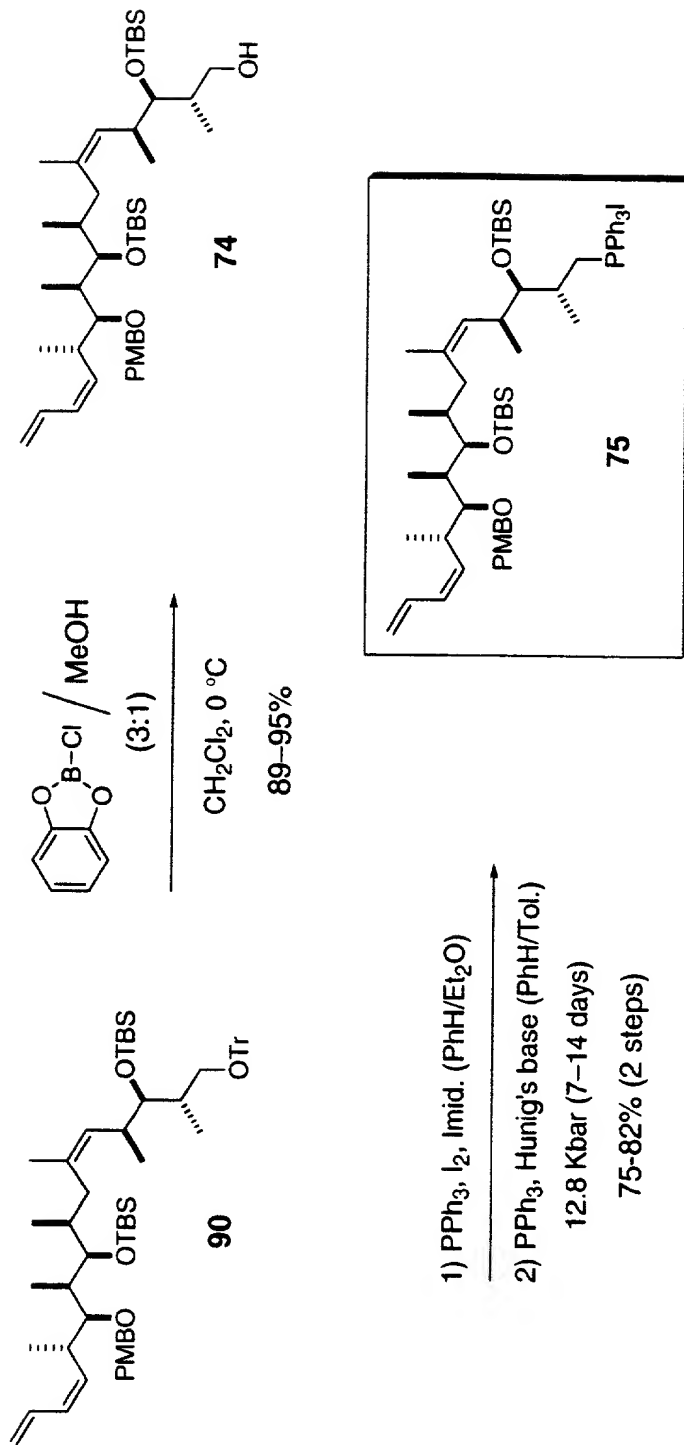
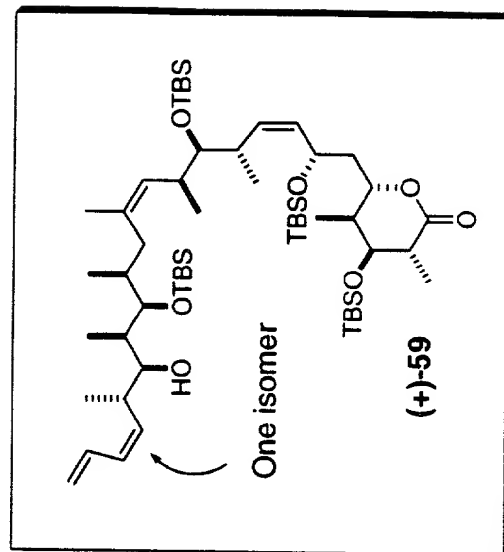
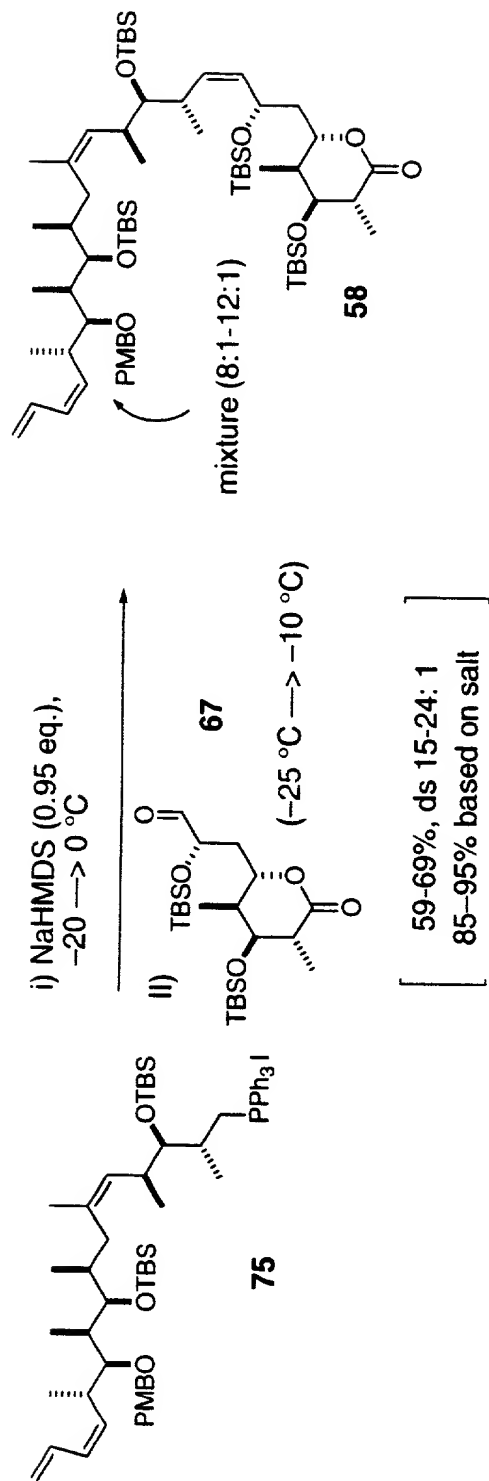


Figure 45



DDQ, CH_2Cl_2 , H_2O

92-96%
 based on starting purity of **58**

Figure 46

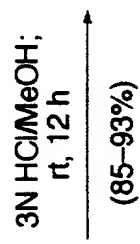
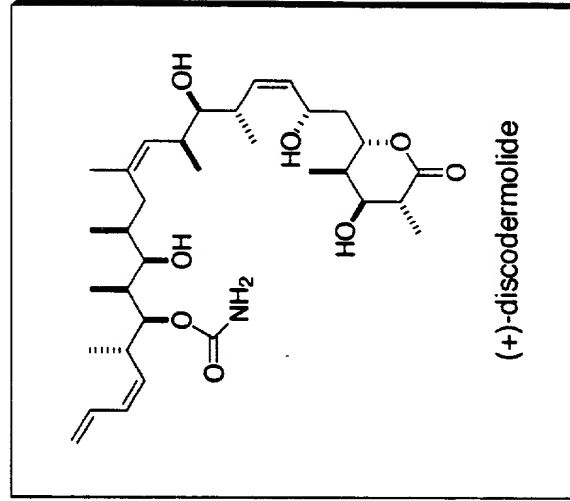
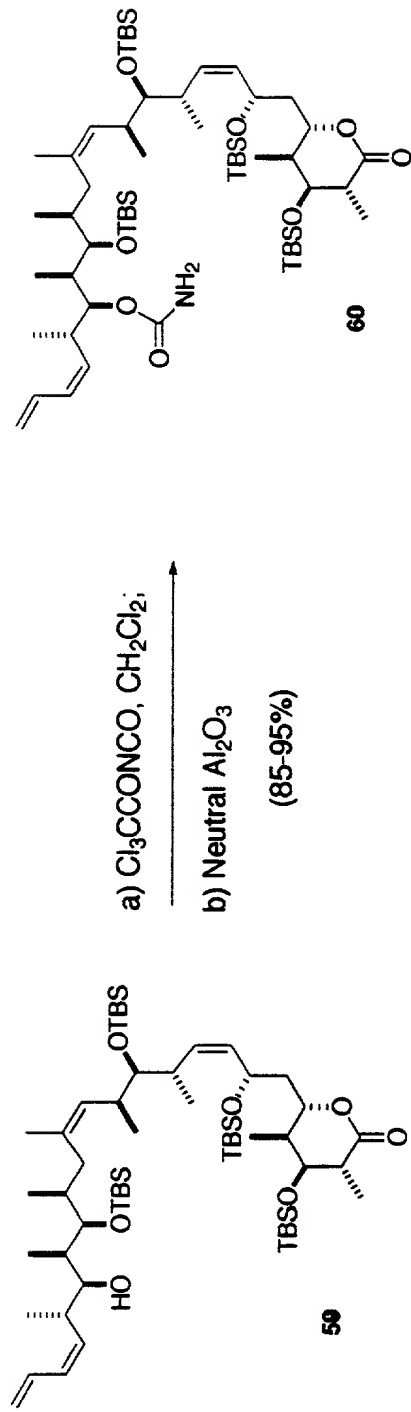


Figure 47

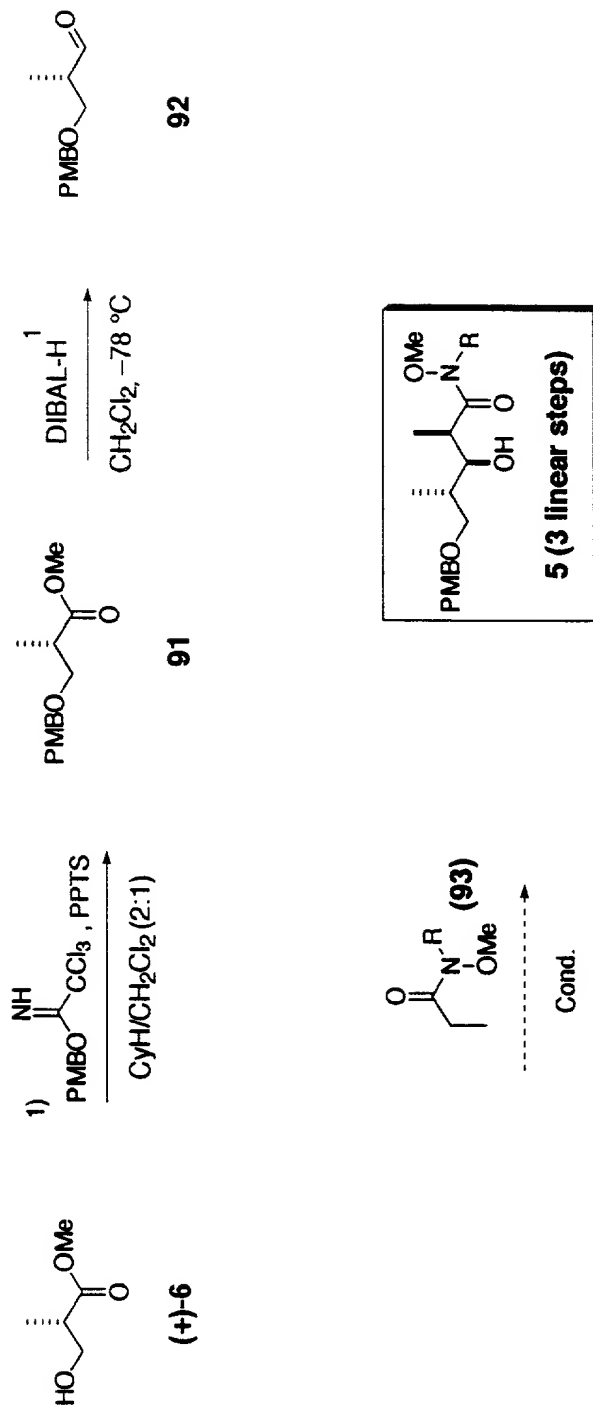


Figure 48

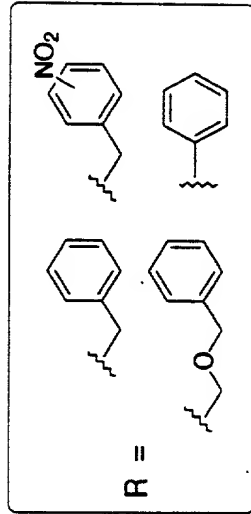
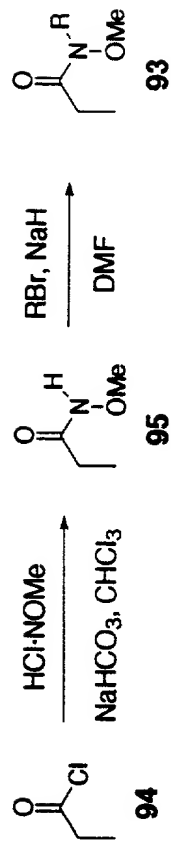


Figure 50

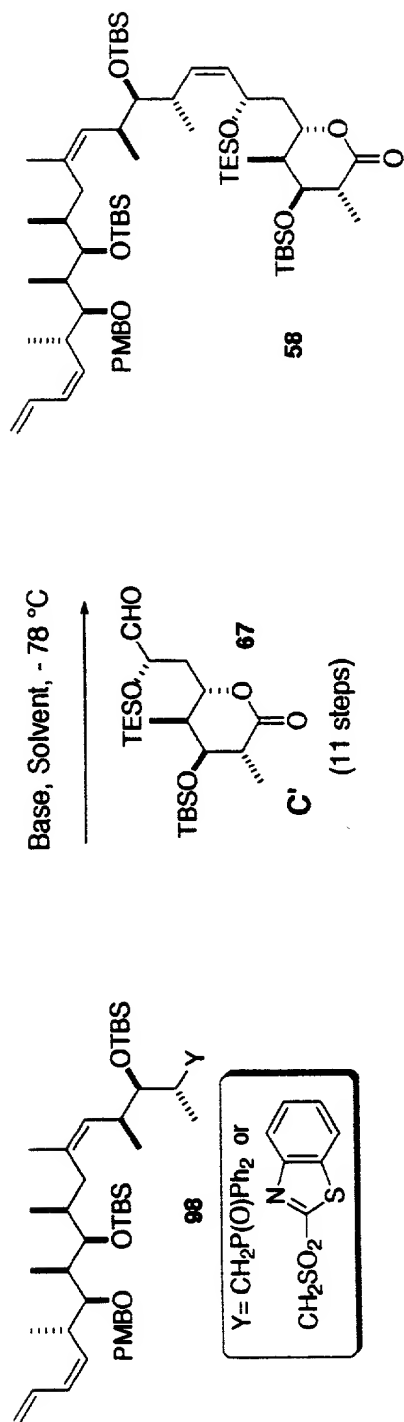


Figure 51

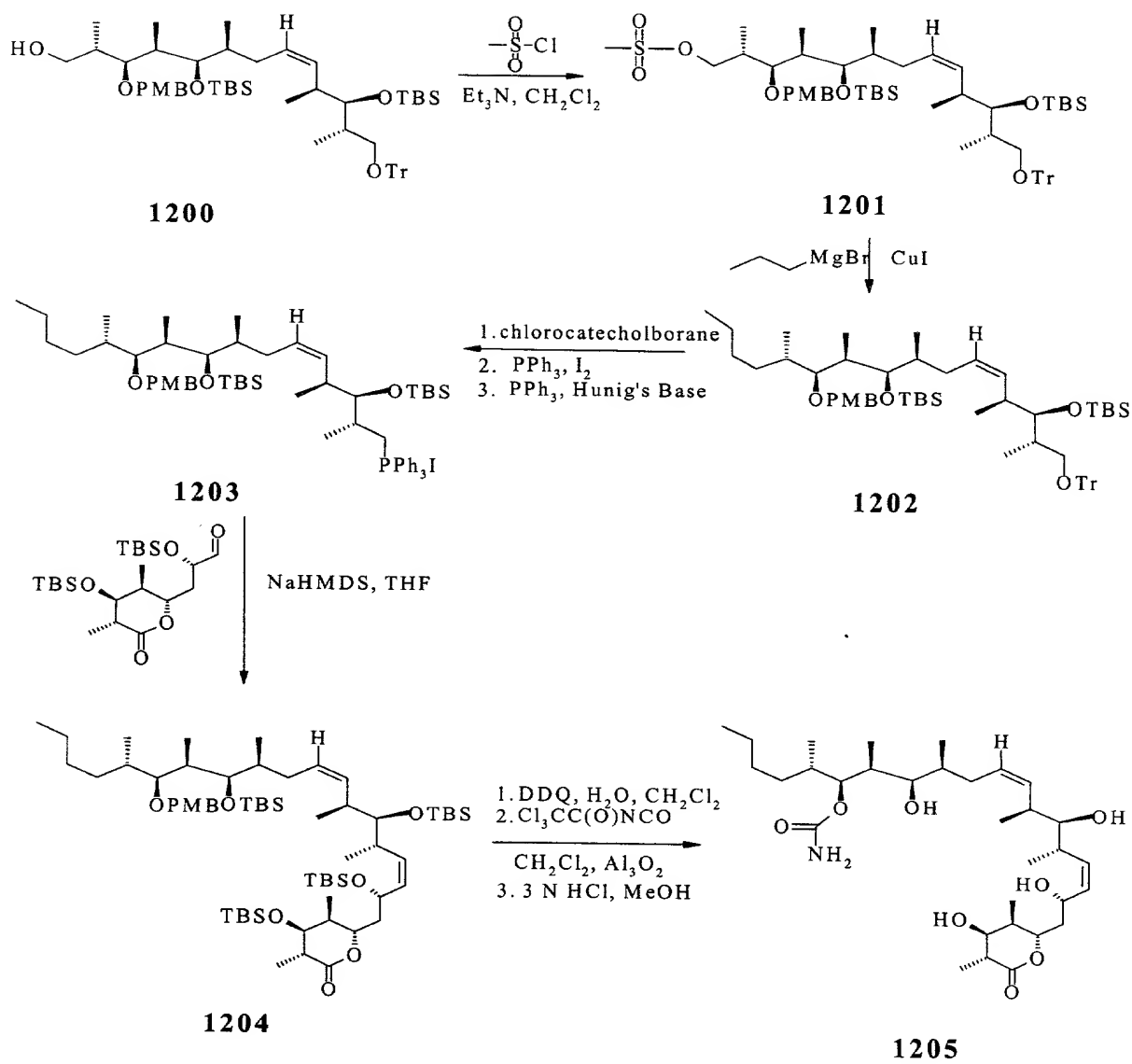


Figure 52

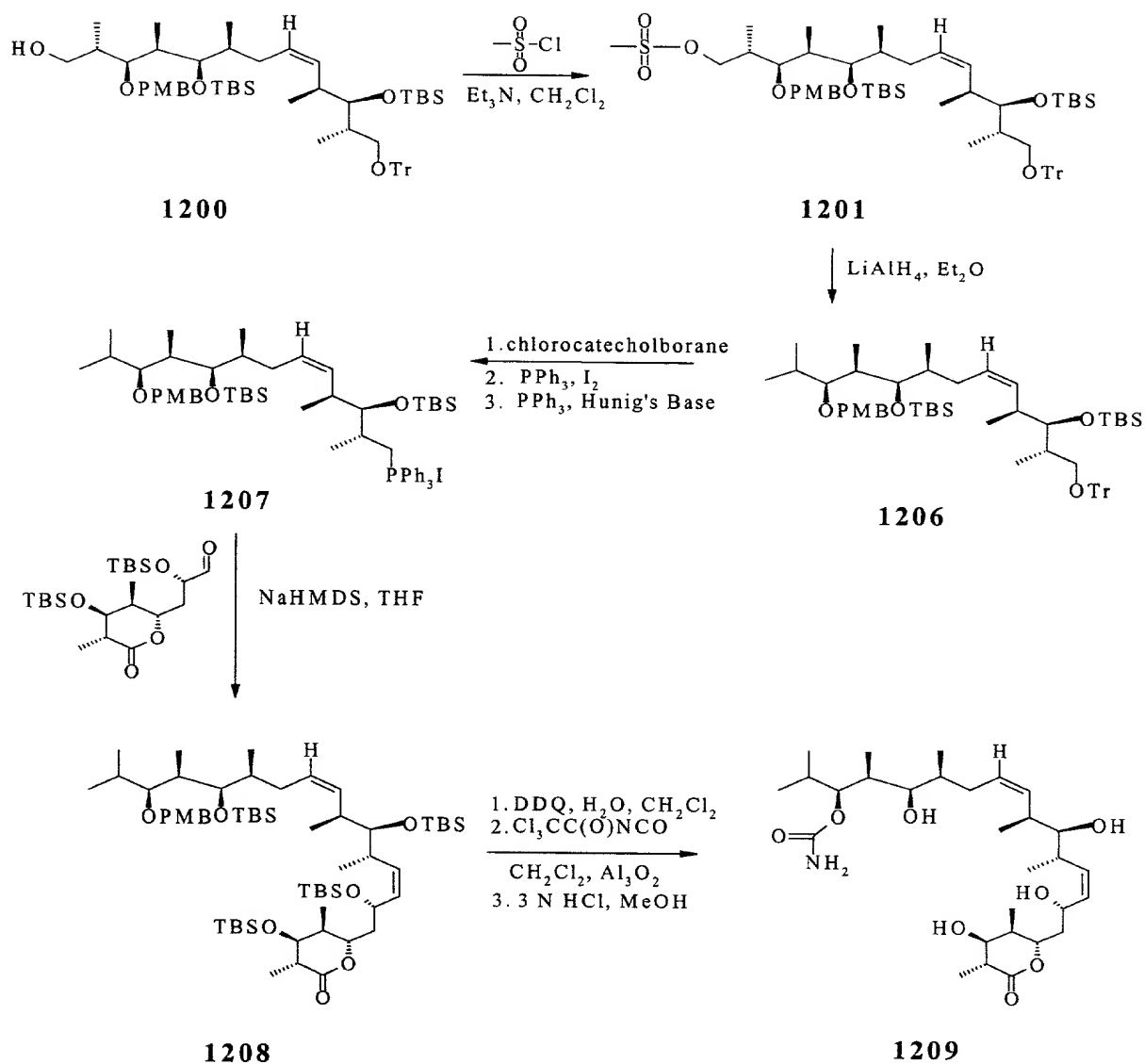


Figure 53

